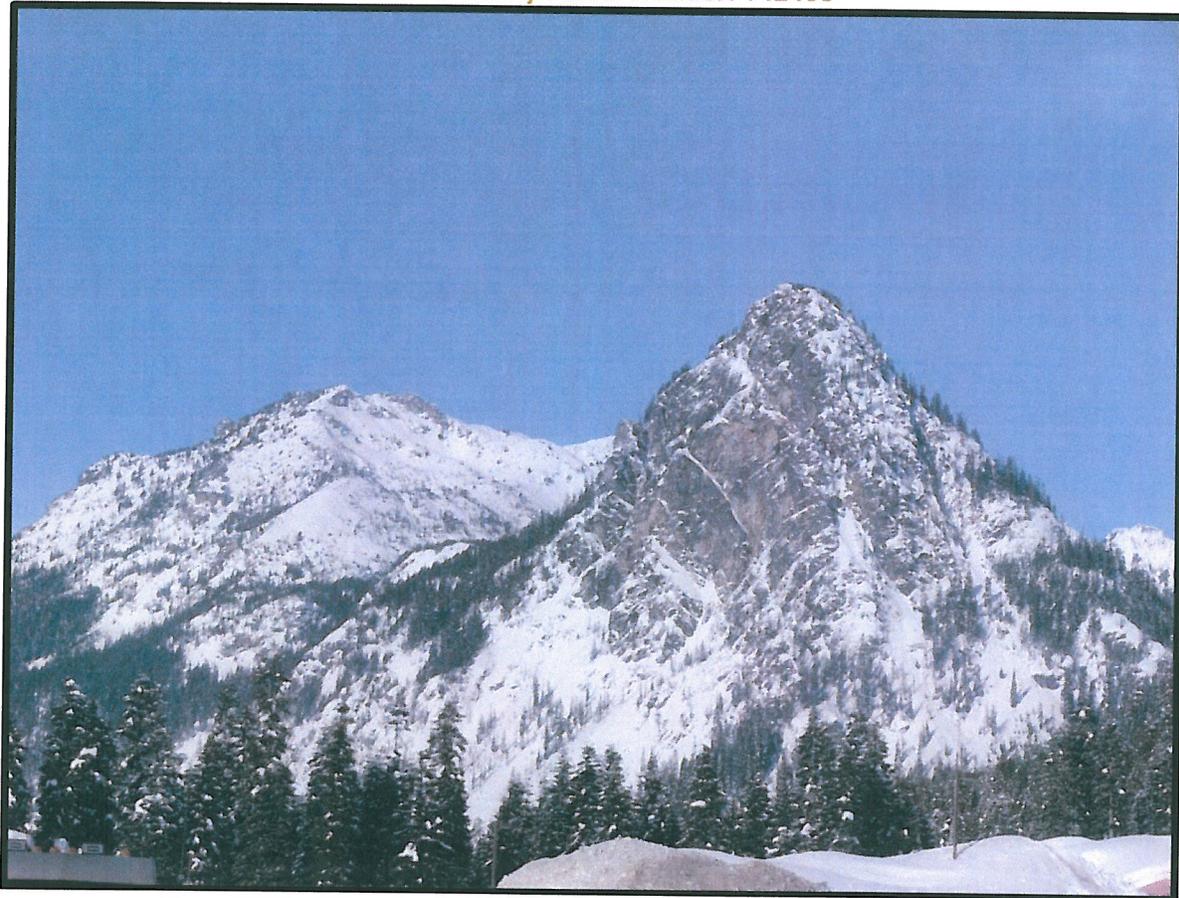




ENVIRONMENTAL, ECOLOGICAL, HYDROGEOLOGY,
GEOTECHNICAL ENGINEERING AND
ENGINEERING GEOLOGY CONSULTANTS

Wetland Identification and Delineation Report

Snoqualmie Summit
60X SR 906 Snoqualmie Pass
Kittitas County Parcel Number: 142436



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Evo Properties

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August 13, 2008



EXHIBIT "A"

Table of Contents

1 EXECUTIVE SUMMARY 1

2 SITE DESCRIPTION 4

 2.1 Site Location 6

 2.2 Legal Description 6

 2.3 Topography 6

3 SOILS, GEOLOGY AND HYDROGEOLOGY 9

 3.1 Soils 9

 3.1.1 Chinkmin Soils Official NRCS Description 11

 3.2 Geology 14

 3.3 Hydrology 17

 3.4 Hydrogeology 20

4 WETLAND IDENTIFICATION AND DELINEATION 28

 4.1 Research 28

 4.2 Historical Overview of the Area 28

 4.3 Wetland Field Studies 32

 4.4 Overview 32

 4.4.1 Wetland Indicators 33

 4.5 June Field Studies 33

 4.5.1 June 25, 2008 34

 4.5.2 Vegetation 34

 4.5.3 Soils 37

 4.5.4 Hydrology and Hydrogeology 38

5 FINDINGS, CONCLUSIONS AND RECOMMENDATIONS 44

 5.1 Findings 44

 5.2 Conclusions 44

 5.3 Recommendations 45

6 LIMITATIONS 46

PARTIAL LIST OF REFERENCES 47

ATTACHMENT A – SITE MAP WITH TRANSECTS AND PLOT LOCATIONS 49

ATTACHMENT B – SITE PHOTOGRAPHS 51

ATTACHMENT C – WETLAND DELINEATION FORMS 61

Table of Figures

Figure 2-1 - Parcel Location Map 4

Figure 2-2 - Site Location Map 6

Figure 2-3 - Topographic Map 7

Figure 2-4 LIDAR Image for Subject Property and Vicinity 8

Figure 3-1 - NRCS Soil Map 10

Figure 3-2 - Soil Map Legend 10

TABLE OF CONTENTS

Figure 3-3 - Type Location for Chinkmin Soils	11
Figure 3-4 - Cross Section of the Cascadia Subduction Zone (from USGS)	15
Figure 3-5 Geologic Map of Subject Property and Vicinity	16
Figure 3-6 - Kittitas County Wetland Map	18
Figure 3-7 US FWS Wetlands Mapper of Subject Property and Vicinity	18
Figure 3-8 - Figure 3-8 - WDFW SalmonScape.	19
Figure 3-9 - USGS StreamStats	19
Figure 3-10 WA Department of Ecology Registered Wells Map	20
Figure 3-11 Well Log 1	22
Figure 3-12 Well Log 2-1	23
Figure 3-13 Well Log 2-2	24
Figure 3-14 Well Log 2-3	25
Figure 3-15 Well Log 3	26
Figure 3-16 Well Log 4	27
Figure 4-1 - Snoqualmie Pass Wagon Trail, 1906	30
Figure 4-2 - Tourist Cabin at Snoqualmie Pass, 1920s	31
Figure 4-3 - Rock Chalet and Museum Located on the Subject Property Prior to Demolition	32
Figure 4-4 Dead Tree	35
Figure 4-5 Typical Vegetation and Snow Encountered at Subject Property	37
Figure 4-6 Confluence of Three Storm Water Conveyances west of Guye Peak Lane	39
Figure 4-7 Storm Water Detention Pond on the Western portion of the Subject Property	40
Figure 4-8 Storm Water Ditch	41
Figure 4-9 Panorama of Large Detention Pond in South East Corner of Subject Property	42

1 EXECUTIVE SUMMARY

The subject property is located in unincorporated Kittitas County and has a Kittitas County Property Tax ID number of 142436. There is no USPS address associated with the subject property, however based on the addresses of properties located nearby it will presumably have a USPS address of 60X SR 906, Snoqualmie Pass, WA 98068. The parcel is located in Section 4, Township 22N, Range 11E (Figure 2-2 – Site Location Map) of the Kittitas County Quarter Section map and has an approximate size of 5.21 acres.

Prior to 2000, the subject property was developed with an approximately 10,000 square foot commercial building, the Rock Chalet and a gravel parking area in the western portion of the subject property. Additionally, there were storm water ditches crossing the subject property from the northwest to the southeast and these ditches discharged into a storm water detention pond located southeast of the subject property. There is a small detention pond located in the western portion of the subject property, which was apparently built by a resident for aesthetic purposes without permission of the homeowner's association. Additionally, the storm water channel originally designed to run along the southern edge of the subject property has been diverted into the subject property several times by residents in order to prevent water from entering their property.

In 1999 Kittitas County issued a demolition permit for the subject property (for 10,000 square feet) for the destruction of the Rock Chalet building built in the 1940's. Apparently issues with abundant snowfall and the lack of proper snow removal caused the building to become unstable and ultimately condemned by Kittitas County. All buildings were demolished in November of 2000, however, the concrete foundations for the westernmost building is still present as is the gravel paved parking areas. There are other remnant features of development, which include storm water ditches, a storm water detention facility in the southeastern portion of the subject property, and small ecology block walls that bound the northern portion of the foundation and gravel parking areas.

The subject property is located near a drainage divide at elevation of approximately 3,000 ASL (above sea level) and is currently zoned as a Planned Unit Development on the western half and Forest and Range on the eastern half. The drainage on and in the area of the subject property is to the southeast, however, less than a ¼ mile to the north, the regional drainage is to the northwest. It appears that this drainage divide was used to determine the boundaries between Kittitas County and King County.

The properties surrounding the subject property are developed with single family dwellings that appear to be primarily used as vacation homes. It is anticipated that future development of the subject property will be similar to the properties bounding the subject property. However, due to the relatively undeveloped nature of the subject property, it was anticipated that critical areas studies would be required to provide to Kittitas County prior to the issuance of the permits required to develop the subject property. SNR Company was retained to conduct these critical areas studies which are summarized in this report.

Prior to conducting field studies, SNR Company conducted research on the subject property and the surrounding area. These studies included review of Kittitas County databases, review of the US Fish and Wildlife Service Wetland Inventory Maps, review of the National Resource Conservation Service soils maps, review of the Washington State Department of Fish and Wildlife SalmonScape maps, review of USGS topographic and geologic maps, review of historic and more recent air photographs, and other research. The research and general area reconnaissance extended up to several miles from the subject property to better understand the geology and the hydrology and hydrogeology on and in the vicinity of the subject property.

This research was conducted to identify potential critical areas that may be present on or in the vicinity of the subject property. After the initial research was completed, SNR Company generated a base map from the Kittitas County website to mark the pre-established transect and plot locations and to add additional transect and plot locations during field activities. SNR conducted field activities on the subject property on June 25, 2008. Where possible, the critical areas field studies extended as much as 150 feet from the subject property's property lines.

SNR's research and field studies did not find that ratable wetland areas are present on or within 150 feet of the subject property's property lines. The vegetation on the subject property did not include any conclusive assemblages of what could be determined to be dominant "hydrophytic" vegetation that would be representative of a wetland area¹. None of soils samples that SNR collected were observed to exhibit hydric characteristics. The hydrology of the subject property did not have the characteristics of naturally occurring wetland hydrology or natural streams considering that the source of the surface water was storm water derived from and discharging into storm water facilities that eventually discharge to what is believed to be a WSDOT storm sewer system that drains to the south and southeast. SNR did not observe any near surface ground water in any of the test plots that were conducted on the subject property. The soils and deposits under these soils have relatively good permeability and there were no apparent aquitards present within 30 inches of the ground surface.

The majority of the vegetation observed to be present on the subject property is considered to be that of a silver fir-subalpine environment. Additionally, research (WSDNR and WDFW) combined with SNR's field observations did not suggest potential threatened or endangered species or species of interest are present on or in the immediate vicinity of the subject property. Due to the relatively low topographic relief of the subject property there were no observed or reported potential geologic hazards associated with steep slopes, erosion hazards, or landslide hazards.

Additionally, SNR did not observe any critical areas streams or other water bodies regulated by the Kittitas County critical areas ordinance on the subject property or on any County or State critical area maps.

SNR's investigations found that all channelized water bodies observed on the subject property were manmade storm water conveyances and all ponded water was in storm water detention facilities, or other manmade storm water diversions. SNR noted that storm water is diverted onto the western portion of the subject property from offsite sources and that this storm water is collected in an unauthorized (unpermitted and improperly designed) storm water detention pond.

¹ In the areas where "wetland" vegetation was observed to be present, the hydrology was derived from storm water that had been directed onto the subject property. Additionally, hydric soils were not observed to be present in these areas. Per the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region, April 2008 – SNR cannot determine hydrophytic vegetation is present unless hydric soils and wetland hydrology are present.

August 13, 2008

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However, SNR was unable to locate easements associated with the subject property's deed that would allow the diversion of storm water flows onto the subject property from offsite storm water facilities. The diversion of storm water from offsite storm water facilities into the unauthorized storm water detention pond located on the western portion of the subject property has required the excavation of storm water ditches to transport the storm water that flows and overflows from the western storm water detention pond to the storm water detention pond located southeast of the subject property. The storm water detention pond in the western portion of the subject property is too small for the flows that enter the pond and does not meet the Best Management Practices (BMP) minimum requirements for a storm water detention pond per the Storm Water Management Manual (Manual) for Western Washington, Washington State Department of Ecology, February 2005 (although the subject property is located in Kittitas County it is not located east of the Cascade Range and is considered to be in Western Washington) nor are the storm water ditches designed with BMP erosion and sediment controls per the Manual. The small pond in the western portion of the subject property was apparently created by residents of the nearby homes who did not obtain the permits needed to create this pond.

SNR's research and field studies did not identify potential ecological critical areas (wetland areas or streams) on or within the immediate vicinity (within 150 feet) of the subject property nor were apparent geologic hazards observed to be present on or in the immediate vicinity of the subject property.

2 SITE DESCRIPTION

The subject property is located in unincorporated Kittitas County, with a Kittitas parcel number of 142436 (Figure 2-1 Parcel Location Map). The parcel is mostly undeveloped, and does not have a USPS address, however, the addresses of the properties adjacent to the subject property suggest that the subject property would have a physical address of 60X SR 906, Snoqualmie Pass, WA (Figure 2-2 – Site Location Map). The focus of these studies was critical areas wetland and stream identification and if necessary, delineation and rating of any wetland areas that may be identified and typing of any streams that may be identified.

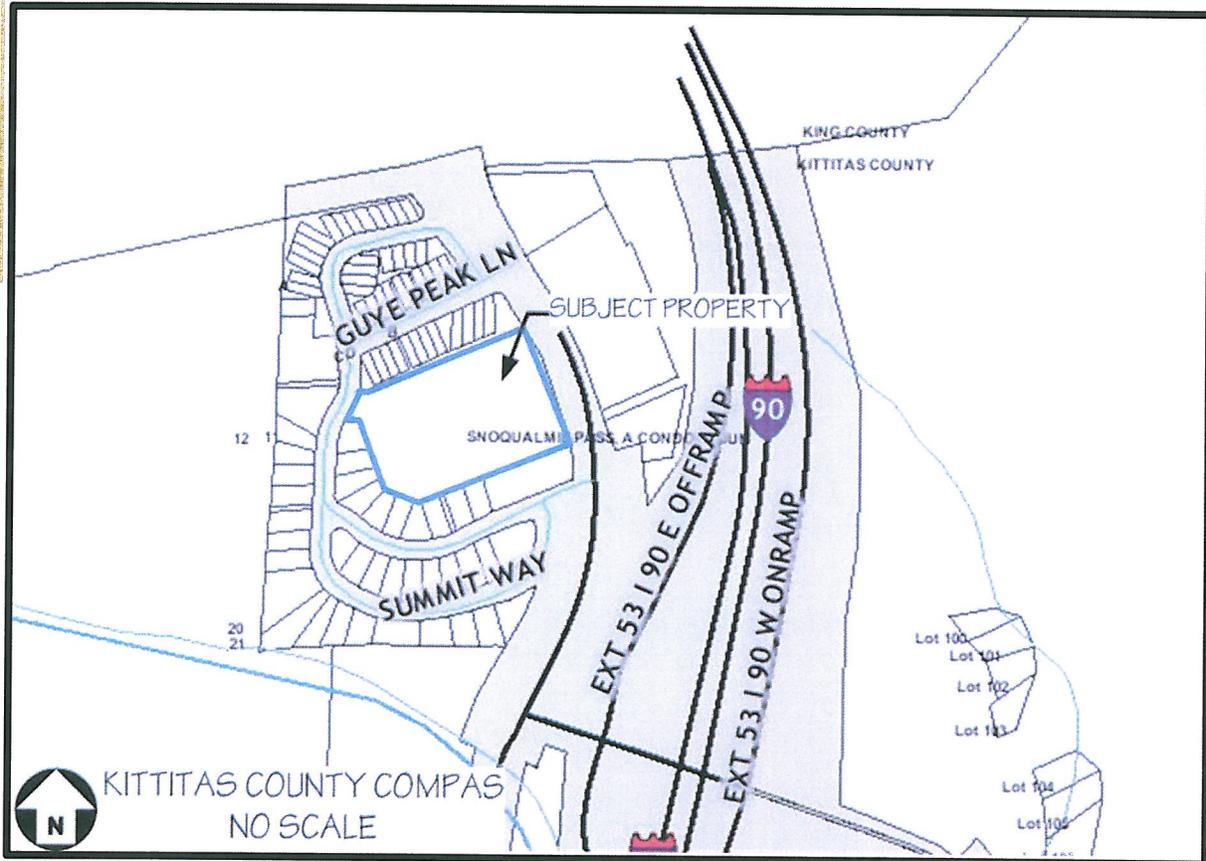


Figure 2-1 - Parcel Location Map

The subject property is located in what appears to be a relic a glacial cirque at the summit of the Snoqualmie Pass and has relatively low topographic relief. The eastern half of the subject property is mostly covered with concrete building foundation and gravel that was apparently used as a parking area. This area also includes small ecology block type walls along the northern portion of the parking pad. It also includes storm water ditches and a small storm water detention pond in the southwestern portion of the subject property. This small pond receives storm water from the storm water ditches located on the subject property (flowing from west to east). It has a culvert located at the southern end that is connected to a tightline that discharges into a larger storm water detention pond located southeast of the subject property.

The western portion of the subject property is forested², containing many second and third growth conifers and in cleared areas assemblages of younger willow and red alder. The understory includes red huckleberry, salmonberry, trailing blackberry, and red currant. As previously discussed, the western portion of the subject property has a moderate sized, earthen storm water detention pond that receives storm water from offsite storm water facilities, including a storm water conveyance that crosses the southern portion of parcel number 402536. The storm water detention pond is not apparently permitted and is reportedly unauthorized. This pond does not appear to be periodically maintained and it appears to be too small for the storm water flows that have been diverted into it because although it has a small outlet, it is overflowing onto eastern portion of the subject property in several areas. Most storm water that enters the subject property from the west enters this western storm water detention pond. Some storm water also enters the subject property from a storm water ditch that bounds the east side of Guye Peak Lane. This diverted storm water enters a storm water ditch system on the subject property. This ditch system drains to the east, into the small storm water detention facility located in the eastern portion of the subject property.

The outfall from moderate sized western storm water detention pond follows a drainage ditch that eventually aligns with the southern property line. This drainage ditch discharges into the western portion of the storm water detention pond located southeast of the subject property. The overflow from the western storm water detention pond is carried in several different drainage ditches to the east where this drainage combines with other storm water ditches and discharges into the small storm water detention facility located on the southwest side of the gravel pad area. This storm water detention pond discharges into an 18" – 24" culvert and is tightlined to the detention pond located southeast of the subject property.

The storm water detention pond located southeast of the subject property has a 24" – 30" culvert that connects to a tightline that discharges to what is believed to be a WSDOT storm water ditch that drains to the south and then to a tightline that passes under SR 906 towards I-90 to the southeast.

² The subject property is located at the silver fir physiographic elevation of the Western Cascades.
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2.1 Site Location

The subject property is located at Range 11E, Township 22N, Section 4 on the Kittitas County Quarter Section Map and the southeast corner of the subject property is located at approximately 47.421134°N and 121.411940°W at 3,000 feet above mean sea level (ASL). The subject property is bounded on the north, west and south by single family dwellings and to the east by SR 906. Beyond the residential housing to the west is the Summit at Snoqualmie ski area. Farther east of the subject property Interstate 90 crests the Snoqualmie Pass summit

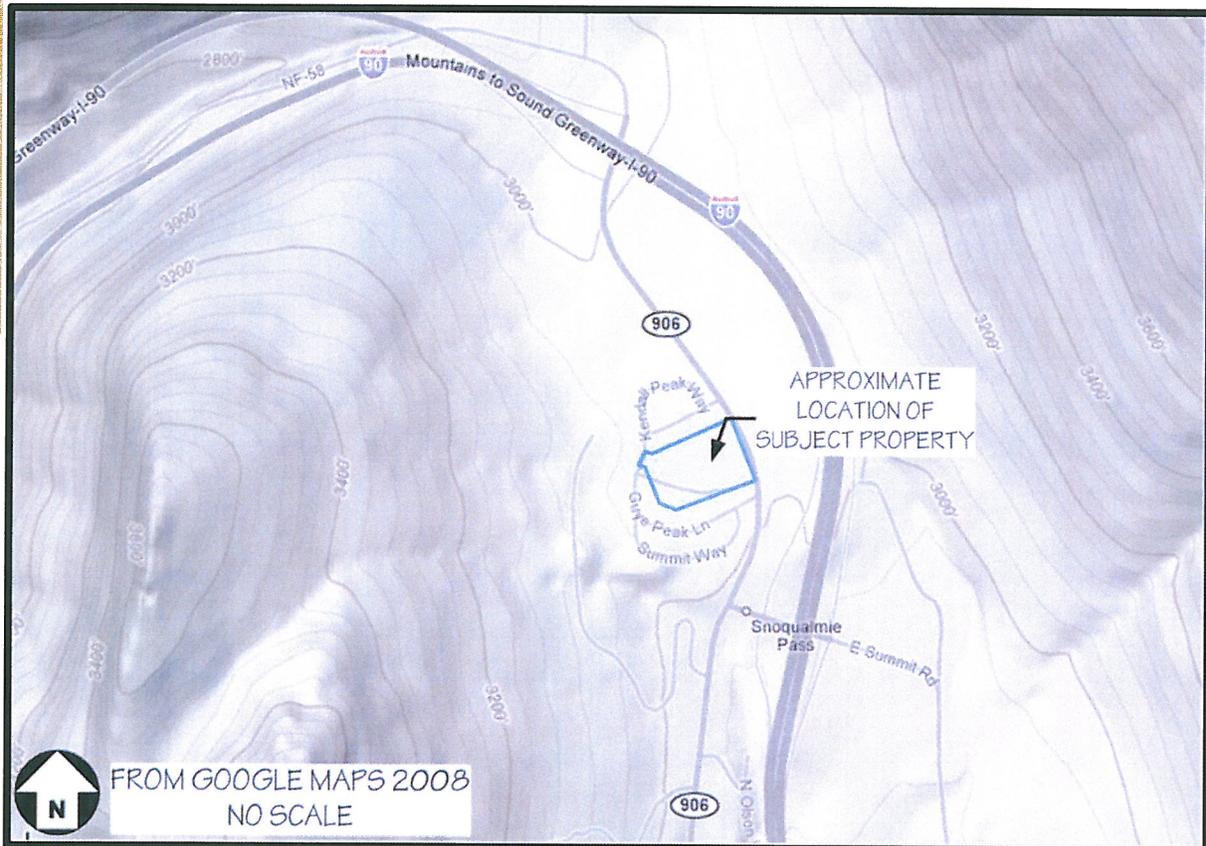


Figure 2-2 - Site Location Map

2.2 Legal Description

The following legal description for the subject property is from the Kittitas County assessor's office; this legal description may differ from the recorded legal description:

ACRES 5.31, VILLAGE AT THE SUMMIT DIV. 1; TRACT E; SEC. 4; TWP. 22; RGE 11

2.3 Topography

The subject property has relatively low topographic relief because it is located near the base of a small valley with relatively steep sides including the Summit at Snoqualmie ski area on the western slopes. (Figure 2-3 Topographic Map). Regionally, the topography is mountainous, characterized by the Cascade Mountains (Figure 2-4 LIDAR Map). The origins of the Snoqualmie River are found near the summit, north of the subject property.

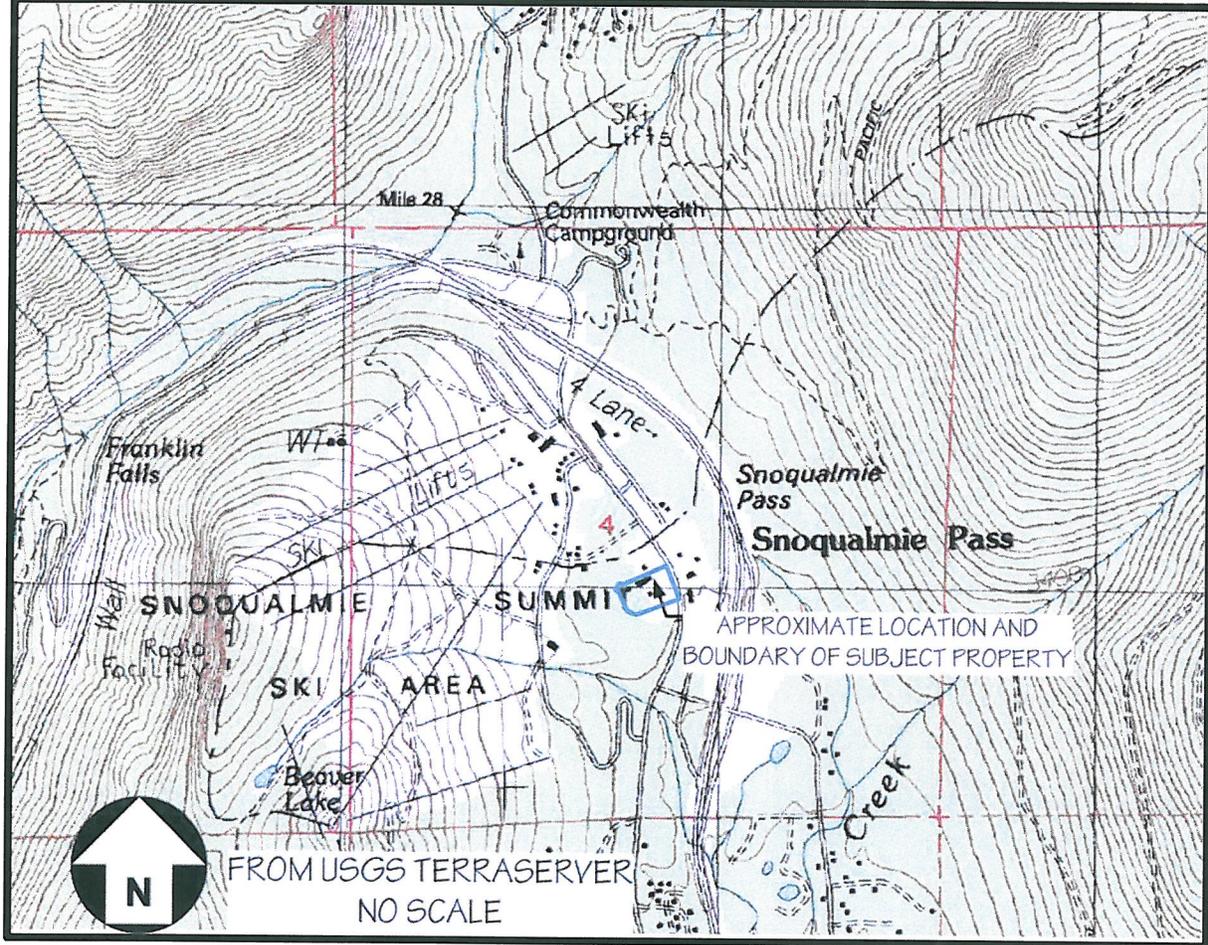


Figure 2-3 - Topographic Map

SITE DESCRIPTION

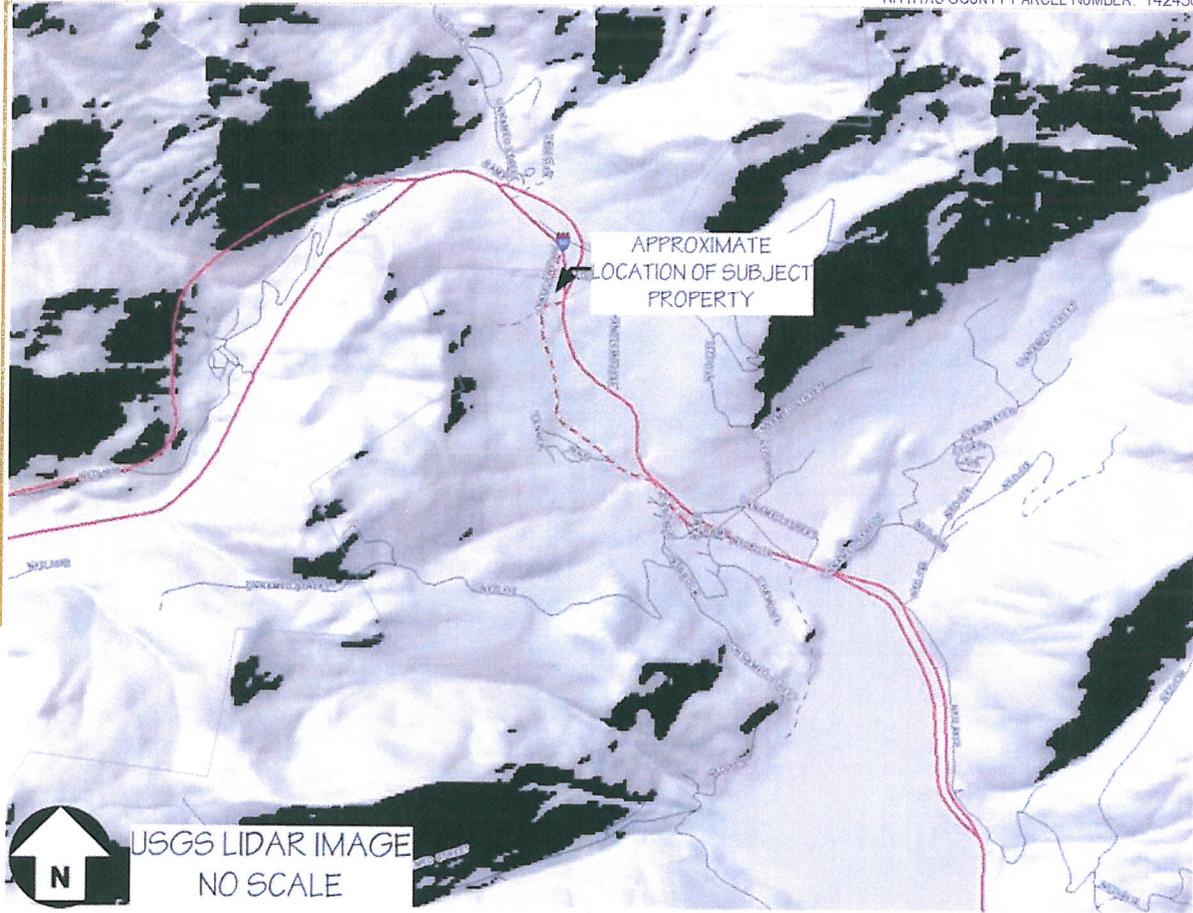


Figure 2-4 LIDAR Image for Subject Property and Vicinity

3 SOILS, GEOLOGY AND HYDROGEOLOGY

Before conducting field activities on the subject property, SNR Company conducted research to allow our field geologists to determine if the site conditions match what is shown on the National Resource Conservation Services soils map and United States Geologic Survey, geologic maps for the subject property. This research included review of the United States Department of Agriculture Natural Resource Conservation Service Web Soil Survey (<http://websoilsurvey.nrcs.usda.gov/app/>) map of the subject property, and the United States Geologic Survey – Geologic Map – Snoqualmie Pass Quadrangle 30x60.

The soils and geology of the site are integral for determining if wetland areas or critical areas streams are present and to determine if natural conditions exist on the site. The use of these maps also provides SNR with a better understanding of the depositional environments and the hydrogeology and hydrology of the area.

3.1 Soils

The NRCS Web Soil Survey Map for the subject property indicates that the soil type is identified as Chinkmin ashy loam, on 5-30% slopes. Because the subject property lies near the border between King and Kittitas Counties, the soil legend represents two different soil surveys which differ on the amounts of ash and sand found in the soil (Figure 3-1 and 3-2 NRCS Soil Map and Legend).

The official Chinkmin soil type is located relatively close to the subject property, within 15 miles of the Snoqualmie Summit (Figure 3-3). Chinkmin soils are associated with alpine glacial till deposits, with layers of volcanic material including ash and pumice. Overall the Chinkmin soils appear to best describe the soil found on the subject property.

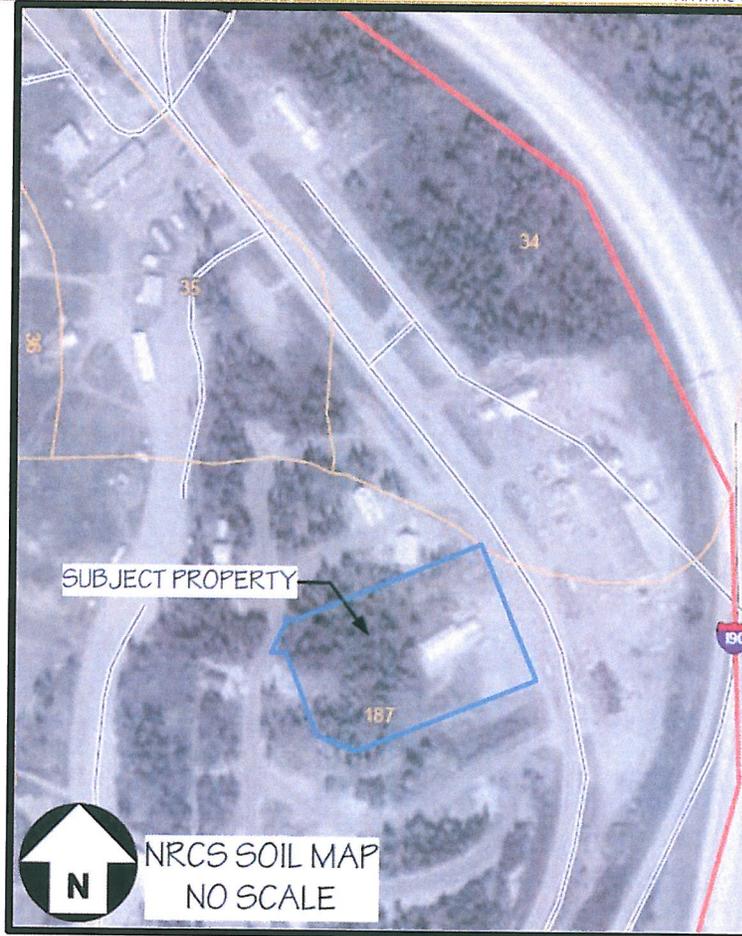


Figure 3-1 - NRCS Soil Map

Kittitas County Area, Washington (WA637)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
187	Chinkmin ashy sandy loam, 5 to 30 percent slopes	58.6	66.0%
188	Chinkmin ashy sandy loam, 30 to 60 percent slopes	0.6	0.7%
Snoqualmie Pass Area, Washington (Parts of King and Pierce Counties) (WA634)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
34	Chinkmin sandy loam, 0 to 15 percent slopes	18.5	20.5%
35	Chinkmin sandy loam, 15 to 30 percent slopes	8.8	9.9%
36	Chinkmin sandy loam, 30 to 65 percent slopes	2.3	2.6%
Totals for Area of Interest (AOI)		69.8	100.0%

Figure 3-2 - Soil Map Legend

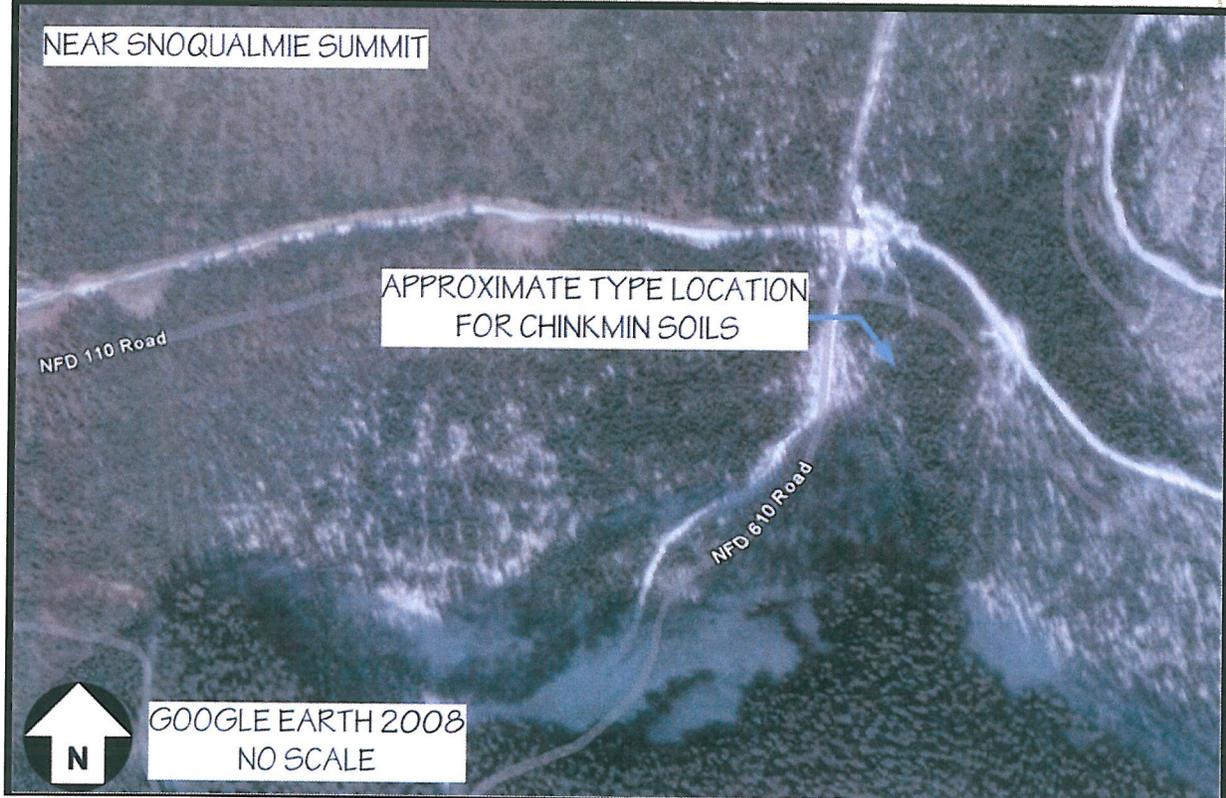


Figure 3-3 - Type Location for Chinkmin Soils

3.1.1 Chinkmin Soils Official NRCS Description

The Chinkmin series consists of moderately deep to cemented glacial till, moderately well drained soils formed in colluvium from glacial till, volcanic ash, and pumice overlying dense glacial till. Chinkmin soils are in cirques, valleys, on lateral moraines and drift plains in mountains. Slopes are 0 to 70 percent. The mean annual precipitation is about 100 inches. The mean annual air temperature is about 40 degrees F.

TAXONOMIC CLASS: Medial-skeletal, amorphic Andic Duricryods

TYPICAL PEDON: Chinkmin ashy loamy sand - forested. (Color is for moist soil unless otherwise stated. All textures are apparent field textures.)

Oi--0 to 1 inch; slightly decomposed loose forest litter; needles, twigs, bark and moss. (1 to 3 inches thick)

Oa--1 to 3 inches; highly decomposed black (10YR 2/1) organic matter that is matted and bound by roots; abrupt smooth boundary. (0.5 to 4 inches thick)

E--3 to 6 inches; gray (10YR 6/1) ashy loamy sand (volcanic ash and pumice), light gray (10YR 7/1) dry; single grain, loose; common very fine, fine, medium and coarse roots; many very fine and fine interstitial pores, very strongly acid (pH 4.6); abrupt wavy boundary. (2 to 6 inches thick)

2Bhs1--6 to 11 inches; dark reddish brown (2.5YR 2.5/4) and yellowish red (5YR 4/6) medial loam, dark reddish brown (5YR 3/3) dry; moderate medium subangular blocky structure; hard, firm, slightly sticky, slightly plastic, moderately smeary; common very fine, fine, medium and coarse roots; many very fine and fine interstitial pores; 10 percent pebbles and shot; very strongly acid (pH 5.0); clear irregular broken boundary. (4 to 7 inches thick)

2Bhs2--11 to 18 inches; variegated strong brown (7.5YR 4/6) and reddish brown (5YR 4/4) gravelly medial loam, strong brown (7.5YR 5/8) dry; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic, moderately smeary; common very fine and fine interstitial pores; 20 percent pebbles, 10 percent cobbles; strongly acid (pH 5.2); clear smooth boundary. (4 to 7 inches thick)

2Bs1--18 to 25 inches; brown (7.5YR 4/4) very cobbly medial loam, yellowish brown (10YR 5/8) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic, moderately smeary; common very fine and fine roots; many interstitial pores; 20 percent pebbles, 30 percent cobbles; strongly acid (pH 5.2); clear smooth boundary. (0 to 8 inches thick)

2Bs2--25 to 35 inches; dark yellowish brown (10YR 3/4) very gravelly medial sandy loam, yellowish brown (10YR 5/4) dry; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; moderately smeary; few very fine and fine roots; many interstitial pores; 35 percent pebbles, 10 percent cobbles; strongly acid (pH 5.4); abrupt smooth boundary. (0 to 15 inches thick)

3Bqm--35 to 63 inches; dark grayish brown (2.5Y 4/2) moderately cemented glacial till, light gray (2.5Y 7/2) dry; common fine prominent reddish brown (5YR 4/4) redox concentrations; massive; very hard, extremely firm, nonsticky, nonplastic; 45 percent subangular pebbles, 20 percent subangular cobbles; strongly acid (pH 5.4).

TYPE LOCATION: Snoqualmie Pass Area, King County, Washington; 20 feet east of Forest Service Road number 2291 in the Hansen Creek drainage; 2,500 feet south, 1,200 feet west of the northeast corner sec. 28, T. 22 N., R. 10 E., W.M.

RANGE IN CHARACTERISTICS: Depth to the cemented glacial till is 20 to 40 inches. The mean annual soil temperature is 38 to 44 degrees F. The 13 to 35 inch particle-size control section has an estimated moist bulk density of 0.85 to 1.10 g/cc, volcanic glass content 30 to 60 percent, acid-oxalate extractable aluminum plus one-half of the acid-oxalate extractable iron of more than 2.0 percent and 15-bar water retention of more than 12.0 percent for air dried samples. Rock fragments in the control section average from 35 to 70 percent by volume.

The E horizon has hue of 7.5YR or 10YR; value of 5 or 6 moist, 6 or 7 dry, and chroma of 1 or 2 moist or dry. Some pedons have a thin A horizon to 3 inches thick with hue of 7.5YR or 10YR moist or dry; and value of 4 or 5 moist, and chroma of 2 or 3 moist or dry.

The 2Bhs1 has hue of 2.5YR, 5YR, or 7.5YR; value of 2 through 4 moist, 3 to 5 dry, and chroma of 3 through 6 moist and 2 to 6 dry. It is medial loam, medial fine sandy loam, gravelly medial fine sandy loam, or gravelly medial sandy loam. It is very strongly acid to moderately acid.

The 2Bhs2 horizon has hue of 5YR or 7.5YR moist and 5YR, 7.5YR, or 10YR dry; value of 3 or 4 moist and 4 to 6 dry; chroma of 4 or 6 moist and 4 to 8 dry. Rock fragments

range from 15 to 40 percent by volume. Textures are gravelly medial loam, cobbly medial loam, very gravelly medial loam, or gravelly medial silt loam, or gravelly medial fine sandy loam. Reaction is very strongly acid to moderately acid.

The 2Bs1 horizon has hue of 7.5YR or 10YR, value is 5 or 6 dry, and chroma is 4 to 6 moist and 4 or 8 dry. Rock fragments range from 35 to 60 percent by volume, both gravel and cobbles are present. Texture is very gravelly medial sandy loam, very cobbly medial sandy loam, very gravelly medial loam, very cobbly medial loam, very cobbly medial fine sandy loam, or very gravelly loamy coarse sand. Reaction is very strongly acid or slightly acid.

The 2Bs2 horizons have hue of 5YR, 10YR, 5Y, or 2.5Y, value of 3 to 5 moist, 5 to 7 dry, and chroma is 3 to 6 moist or dry. It is very gravelly medial loam, very cobbly medial loam, very gravelly medial sandy loam, very cobbly medial sandy loam, or very gravelly loamy coarse sand. Reaction is very strongly acid or slightly acid

Some pedons have a C horizon.

The 3Bqm horizon has hue of 5Y, 2.5Y, or 10YR, value of 4 or 5 moist, 5 to 7 dry, and chroma of 2 to 8 both moist and dry. It is cemented glacial till that breaks to a very gravelly loam, extremely gravelly loam, very cobbly sandy loam, or very stony sandy loam. Rock fragments range from 40 to 75 percent.

COMPETING SERIES: These are the similar Haywire, Nagrom, Nimue, Nondalton, and Playco soils. Haywire and Nagrom soils are 20 to 40 inches deep to a lithic contact. Nondalton, Nimue, and Playco soils are more than 40 inches deep.

GEOGRAPHIC SETTING: Chinkmin soils are in cirques, valleys, and on lateral moraines, valley moraines, and drift plains in the mountains. These soils formed in colluvium from glacial till, volcanic ash, and pumice overlying cemented glacial till. Source rock is predominantly andesite, granodiorite, metasediments, and metavolcanics. Slopes are 0 to 70 percent. Elevations range from 2,500 to 6,000 feet. The climate is marine influenced with cool, dry summers and cold, wet winters. The average annual precipitation ranges from 80 to 140 inches. A considerable portion of the precipitation is in the form of snow. The mean January temperature is about 27 degrees F, the mean July temperature is about 58 degrees F, mean annual air temperature is about 40 degrees F. Frost-free season is 50 to 100 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Alkiridge, Altapeak, Haywire, Kindy, Nimue, Reggad, Serene, and Vabus soils and the competing Haywire and Nimue soils. Altapeak and Serene soils lack cemented glacial till within 40 inches of the surface. Alkiridge, Kindy, and Vabus soils have spodic horizons with a ratio of free iron to carbon of greater than 0.2. Altapeak and Nimue soils are both deep. Reggad soils are fragmental.

DRAINAGE AND PERMEABILITY: Moderately well drained; slow to rapid runoff; permeability is moderate or moderately rapid in the upper part and very slow in the cemented glacial till substratum. A perched water table is as high as 2.5 to 3.5 feet at times from November through July.

USE AND VEGETATION: Forestland, watershed, and wildlife habitat. Overstory vegetation includes Pacific Silver fir, noble fir, western hemlock, Douglas-fir, Alaska-cedar, mountain hemlock, and subalpine fir. Understory vegetation includes tall blue huckleberry, black mountain huckleberry, salmonberry, rusty menziesia, common beargrass,

bunchberry dogwood, Oregon-grape, dogwood, white rhododendron, Cascades azalea, brackenfern currant, heather, tufted hairgrass, and Sitka mountainash.

DISTRIBUTION AND EXTENT: North central Cascade Mountains in Washington. Series is of moderate extent.

MLRA OFFICE RESPONSIBLE: Portland, Oregon

SERIES ESTABLISHED: Snoqualmie Pass Area, King County, Washington, 1986.

REMARKS: Diagnostic horizons and features recognized in this pedon are an albic horizon from the mineral surface to 3 inches, a spodic horizon from 6 to 25 inches with high organic carbon in the upper 12 inches, and cemented glacial till at 35 inches. Partial laboratory data are available on this series. Lincoln Lab. Nos. S79WA- 033-003, S80WA-037-005, and 8753007003. This series also meets the subgroup criteria for Oxyaquic.

SNR generally uses NRCS soils descriptions as a reference only, the soils are identified in the field to determine if they match the soils shown on the NRCS soils maps. SNR also uses the USGS and Washington State Department of Natural Resources Geologic maps as a reference for the depositional environment of a subject property; however, SNR verifies this environment and the deposits that are found on the site and in the vicinity of the site during the field activities that are conducted on the subject property and vicinity. As previously discussed, the soils observed on the subject property appear to generally have the characteristics of Chinkmin soils.

Chinkmin soils are characterized by the NRCS as being moderately well drained, and generally do not form hydric soils. In addition, the soils associated with Chinkmin soils also do not typically form hydric soils. The soils derived from the alpine glacial till reportedly have rapid permeability and will not typically pond surface water long enough to form wetland conditions.

The cemented till which underlies the soils is relatively shallow (approximately 40 inches below ground surface according to the NRCS Soils Description) and will create an aquitard that can cause perched groundwater during certain times during the year. Perched groundwater conditions were not encountered during field activities

3.2 Geology

The subject property is located at the summit of the Snoqualmie Pass in the Cascade Mountain Range at approximately 3,000 ASL. The regional geology of the Cascades has been influenced by the Cascadia Subduction Zone and the significant alpine glaciation subsided (glacial retreat) within the last 10,000 – 12,000 years. Alpine glaciers are still found at higher elevations in the Cascades.

The Cascadia subduction zone is a result of the collision between the Juan de Fuca oceanic plate and the continental North American plate. Oceanic plates are comprised of dense material and will sink or “subduct” beneath the less dense continental plates (Figure 3-4). As the ocean plate subsides down towards the mantle of the Earth, the heat from the mantle causes the oceanic plate to melt. As the plate melts, the heat is released and rises toward the continental crust. The hot material rising up from the mantle created many of the large volcanoes such as Mount Saint Helens and Mount Rainier.

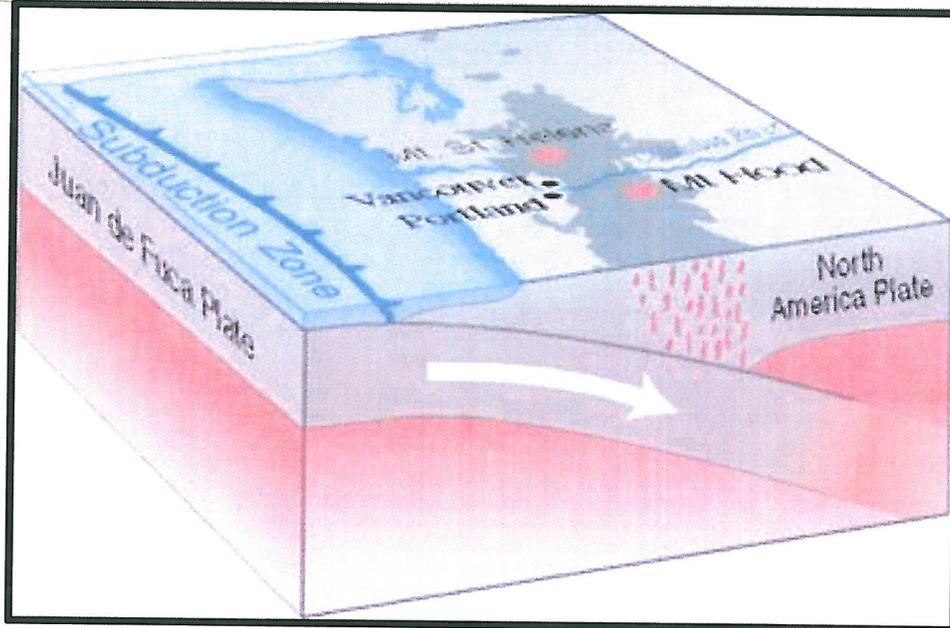


Figure 3-4 - Cross Section of the Cascadia Subduction Zone (from USGS)

The Cascade Ranges themselves are a result of the tectonic pressure resulting from the Juan de Fuca plate causing extreme pressure on the North American Plate, which has “folded” Puget Lowland areas and has “uplifted” the Cascade Mountains. The uplift of the Cascade Range continues to this day.

The rise of the Cascade Mountains has created a rain shadow effect, allowing most of Western Washington to receive up to 150 inches of precipitation³, while on the eastern side of the Cascades, the average precipitation falls to approximately 9 inches.

The north Cascades and the south Cascades are split approximately along the Interstate 90 corridor. The north Cascade geology is dominated by metamorphosed rocks emplaced while the oceanic slab was subducted. The southern Cascades however are relatively unmetamorphosed volcanic material. Mount Si is an example of highly metamorphosed material, while much of the Snoqualmie Pass area is a large volcanic batholith, which is not metamorphosed. The subject property is located on the volcanic bedrock at depth.

The subject property is located in a volcanically active area, with the highly active Glacier Peak Cascade volcano being located less than 60 miles to the north of the subject property. Mt. St. Helens, which is the most active of the Washington State Cascade volcanoes is located less than 85 miles to the south of the subject property (Mt. Rainier is located less than 40 miles from the subject property but is less active). Glacier Peak and Mt. St. Helens have erupted several times since the last significant alpine glaciation and deposits from these volcanoes can be found on the subject property in the form of ash and tephra (larger volcanic debris). SNR's field team found a small (approximately 10 cm in size) volcanic bomb on the subject property and observed volcanic ash in the soils. These volcanic deposits are most likely associated with the last explosive eruption of the Glacier Peak Cascade volcano.

³ The Olympic Mountains to the west also create a rain shadow, with the western face of the Olympic Mountains receiving up to 145 inches of rain per year in the temperate rain forest areas.

High altitude (6,000 feet ASL or greater) alpine glaciation for the last several thousand years has had a significant effect on the modern day appearance of the Cascade Range. On some of the higher peaks, alpine glaciers are found to this day. However, late Pleistocene (Wisconsin age, approximately 50,000 years before present) to early Holocene (approximately 11,000 years before present) alpine glaciation associated with the Frasier glaciation had the second most significant impact on the morphology of the Cascade Range (the Cascadia subduction zone has had the most significant impact).

The Frasier glaciation had several events (Stades) ending with the Vashon Stade approximately 10,000 years before present. During these glacial Stades, the alpine glaciers extended into the Cascade foothills and may have formed confluences with continental glacial lobes that extended through the Puget Lowlands (an area from the eastern Olympic Mountain foothills to the western Cascade Range foothills).

Alpine glaciers are "rivers" of ice, filling alpine valleys and their advancement and retreatment create erosional features such as cirques, horns and arêtes (narrow crests with sharp edges). Like continental glaciers, alpine glaciers create moraines as they advance and retreat.

As the alpine glaciers retreated from the lower elevation regions, the material left behind included glacial erratics, outwash material and glacial till. Much of the material transported by the glaciers was derived from local sources, and includes volcanics and metamorphic material.

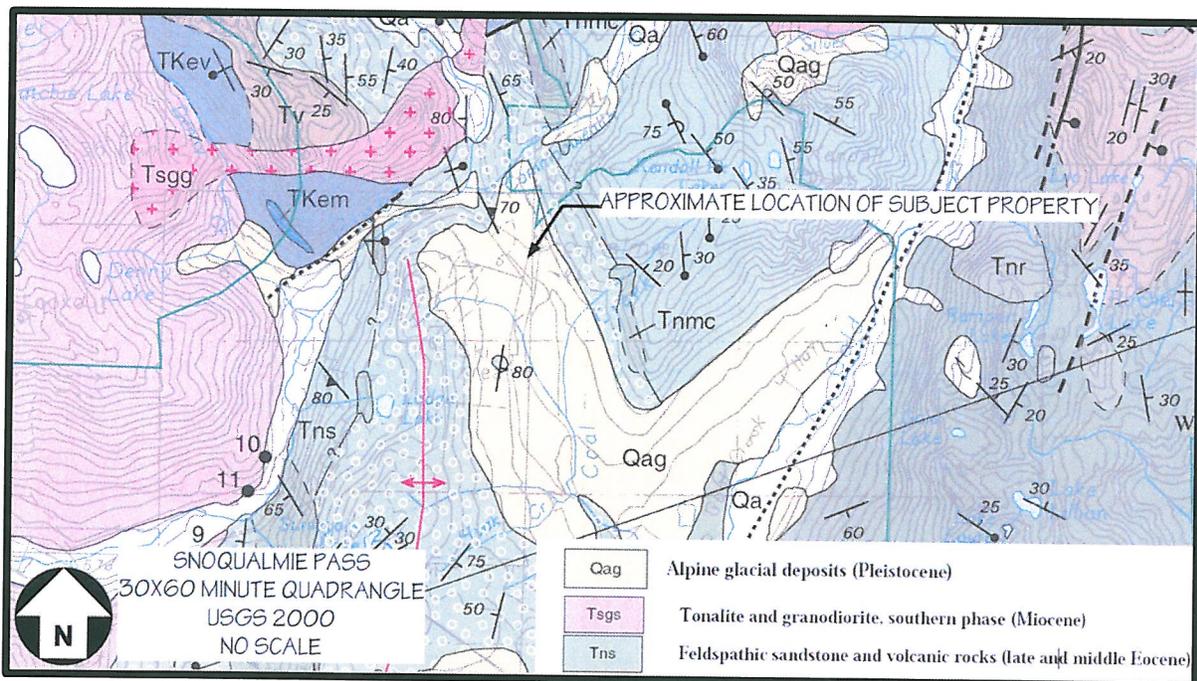


Figure 3-5 Geologic Map of Subject Property and Vicinity

The geologic deposits found on the subject property are glacial in origin, but also include some volcanic ash and tephra. The deposits SNR observed in the field include materials that would be the equivalent to outwash deposits, most likely associated with a receding Pleistocene age alpine glacier. These outwash deposits are actually water transported deposits that resemble fluvial (stream or river transported) deposits. These deposits reportedly overly lodgment till, which may overly glacial advance outwash deposits. These deposits overly volcanic deposits and sediments derived from volcanic deposits. These volcanic deposits are extrusive volcanic deposits that include andesites, rhyolites, and tonalities.

As previously discussed, the Cascadia subduction zone is currently active, moving up to four centimeters per year. This movement in the subduction zone generates the energy that makes Western Washington a seismically active area. This seismic activity is reflected in fault traces that occur throughout Western Washington, however, many of these fault traces are not observable unless the seismic activity occurred relatively recently⁴ (other features can be observed to determine if a fault trace may be present).

The geologic map does show interpreted and observed fault traces in the vicinity of the subject property, however, none of these fault traces are in the immediate vicinity of the subject property. Additionally, SNR did not observe evidence of faulting on the subject property, however, fault traces can often be difficult to distinguish in forested areas and the LIDAR imagery for the subject property is not detailed enough to provide information on potential fault traces.

3.3 Hydrology

The subject property is located in a subalpine to silver fir habitat zone which is primarily based on altitude and the amount of precipitation that the area receives. This area has a short growing season because of the location and elevation which leads to freezing conditions from October to as late as May. These freezing conditions can lead to significant quantities of snowfall that can accumulate to significant depths. The snowmelt from accumulating snow can generate a relatively long period of surface water flows that are ephemeral in nature (ephemeral flows are the result of precipitation creating surface water flows or snowmelt creating surface water flows; seasonal streams are caused by rising ground water that becomes exposed in channels, there was no evidence of near surface ground water resulting in surface water flows on the subject property).

The snowmelt on and in the vicinity of the subject property is handled by storm water facilities and conveyances. As previously discussed in this report, many of these facilities and conveyances do not include Best Management Practices erosion and sediment controls and many do not appear to have been engineered to meet the minimum requirements of the Storm Water Management Manual for Western Washington (Manual). In many cases these storm water facilities and conveyances have been ponded or pooled by unauthorized activities conducted by others without the knowledge of the property owner.

The research of public documents conducted by SNR suggests that there are no mapped streams or mapped wetland areas on or in the immediate vicinity of the subject property. This research included the Kittitas County sensitive areas maps, (Figure 3-6) the US FWS Wetland Mapper (Figure 3-7), the WDFW Salmonscape (Figure 3-8), the USGS topographic map (Figure 2-3) and geologic map (Figure 3-5), or the USGS StreamStats (Figure 3-9) none of which show any wetland areas or streams to be present on or in the immediate vicinity of the subject property.

Along the southern boundary of the subject property there was a moist area that was concentrated around a storm water conveyance. The storm water channel originates at a culvert located west of the subject property and ultimately drains into a storm water detention pond along the south east corner of the subject property.

There are two storm water detention ponds in the near vicinity of the subject property which serve as the entrance and the exit of the storm water found on the subject property⁵. They are interconnected with a series of rudimentary storm water ditches found throughout the subject property. Hydric soils were not observed in any of the test plots conducted in these areas that are moist from the storm water flowing in these ditches.

⁴ Fault traces are considered recent if they have occurred during the Holocene.

⁵ There is a third storm water detention facility located near the southwest boundary of the gravel paved area on the subject property. This facility is a larger storm water ditch that is large enough to handle greater flows of storm water.



Figure 3-6 - Kittitas County Wetland Map

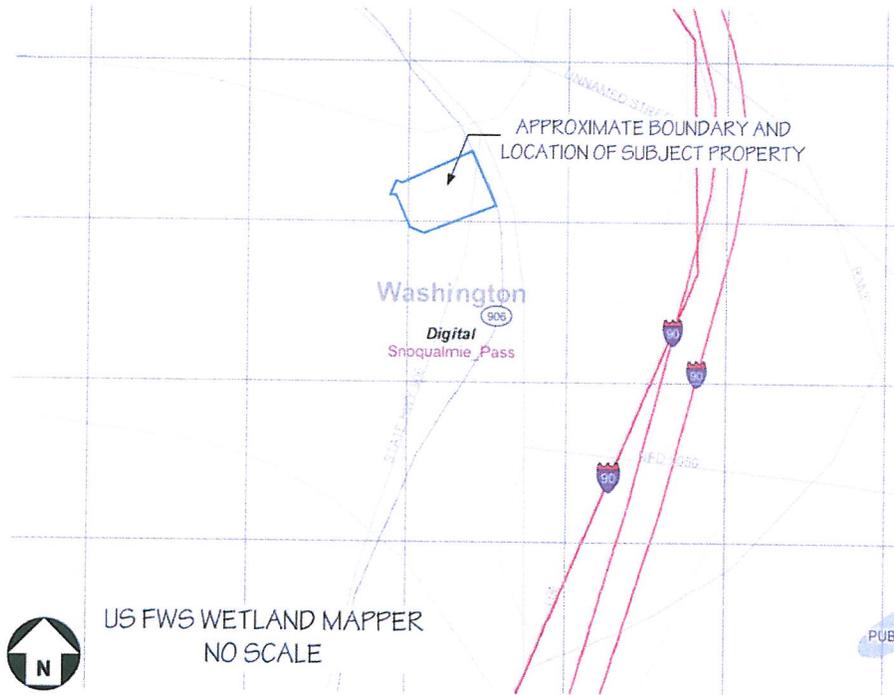


Figure 3-7 US FWS Wetlands Mapper of Subject Property and Vicinity

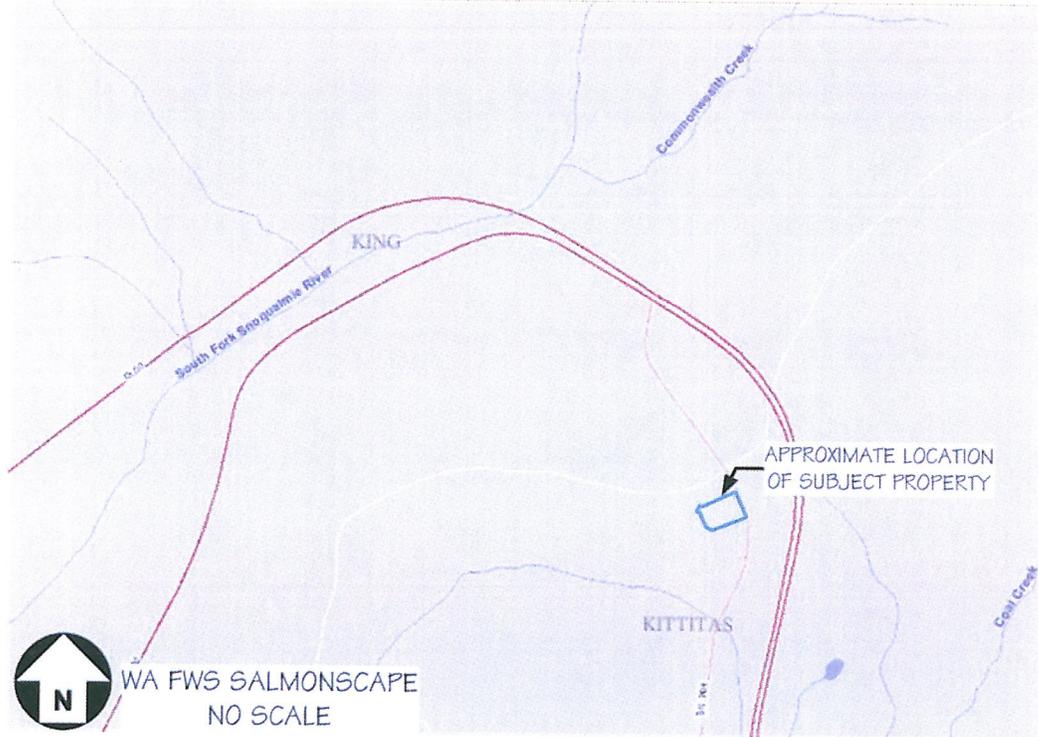


Figure 3-8 - Figure 3-8 - WDFW SalmonScape.

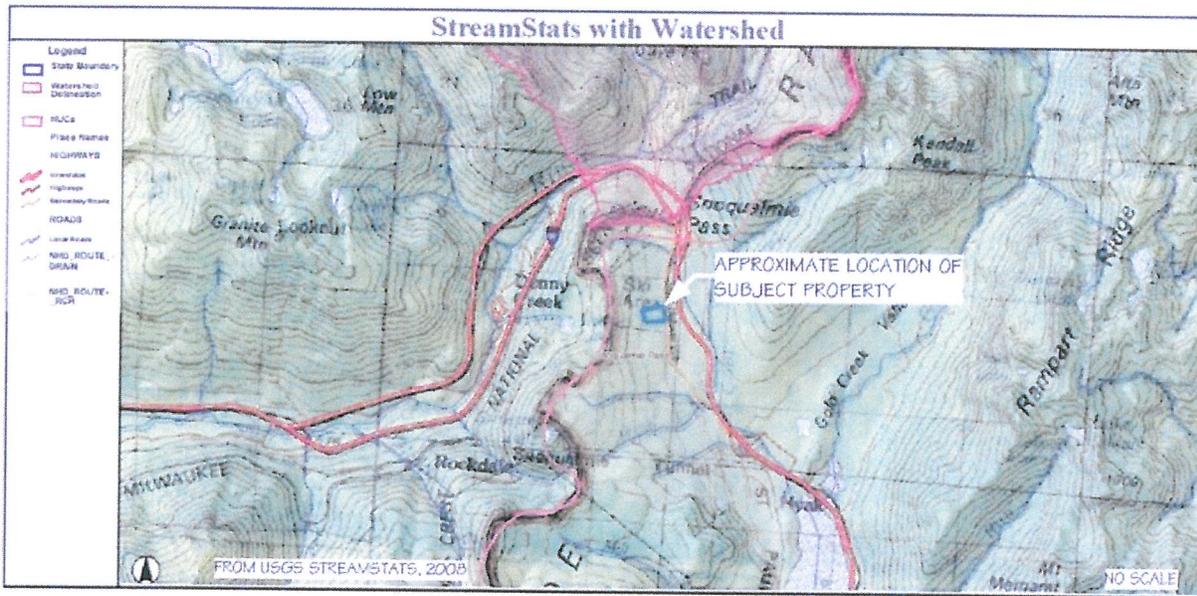


Figure 3-9 - USGS StreamStats

SNR did not observe naturally occurring wetland hydrology in any of the transects or test plots conducted on the subject property. The surface water observed on the subject property was all associated with storm water, human alterations made on the subject property to control ground water, and snowmelt.

3.4 Hydrogeology

To better understand the hydrogeology of an area, SNR's research includes obtaining information from the Washington State Department of Ecology's (Ecology's) Well Log database at <http://apps.ecy.wa.gov/welllog/>. This site lists many of the well logs Ecology has received, with these well logs being located in a GIS database that allows for searches in specific areas (Figure 3-8).

The well logs in the vicinity of the subject property are interesting because the well logs indicate that most of the wells are screened in fractured igneous bedrock, which is less common in the lower elevations of the Puget Lowland (Figures 3-10 – 3-16). The well logs suggest that there is less glacial till (which is absent in some of the logs) than would typically be observed in the Puget Lowlands and that there are more fluvial deposits (including outwash deposits) above old basalt deposits. The drinking water aquifer is apparently located in fractured basalts beneath the glacial and alluvial deposits.

These logs are not prepared by licensed hydrogeologists or geologists; however, they do provide valuable information about the subsurface sediments, ground water, and subsurface conditions that have been observed in the vicinity of the subject property. Also, each log indicates that the static ground water level in every well was located at depth (at least 30 feet below ground surface), with no near surface ground water being observed.

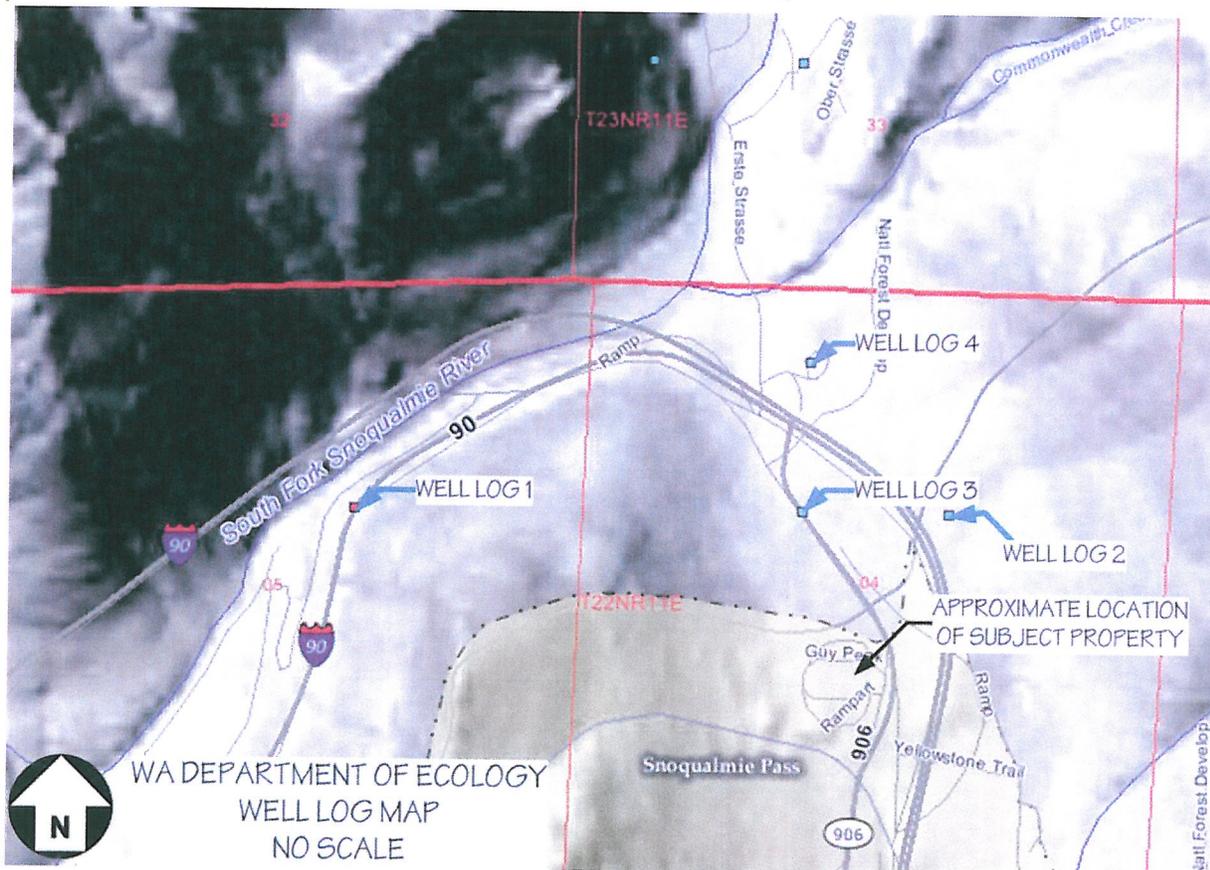


Figure 3-10 WA Department of Ecology Registered Wells Map

The well logs are similar in the descriptions of the fractured, dark basaltic bedrock that underlies the glacial and alluvial deposits. This dark basalt parent material (almost always having low hues and low chromas on the Munsell color chart) is what the glacial deposits are derived from and is what leads to the naturally darker soil that is derived from these sediments. The only metamorphic material described in the well logs is minor amounts of shale; this due to the subject property being located in the southern Cascades which is dominated by volcanic material, not metamorphic rocks.

Some of the well logs indicate that small amounts of perched ground water was found between 4-18 feet below ground surface on glacial till (hardpan) where till was present. However, these perched conditions were not found to be present in the near surface deposits or soils (within 30 inches of the ground surface).

SNR did not encounter ground water in any of the soil borings conducted in the test plots, even in borings that were conducted to 30" below ground surface. These field activities were conducted during active snowmelt which would typically be associated with high ground water recharge, however, no ground water was observed within 30 inches of the ground surface. The lack of near surface ground water during a period when ground water would have a significant amount of recharge suggests that ground water conditions that would be conducive to wetland hydrology are not present on the subject property.

22/11-04-G

File Original and First Copy with
Department of Ecology
Second Copy - Owner's Copy
Third Copy - Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Application No.

Permit No.

The Department of Ecology does NOT Warrant the Data and/or the Information on this Well Report.

(1) OWNER: Name Dept. of Natural Resources Address Olympia, WA 98504

(2) LOCATION OF WELL: County King - SW 1/4 NE 1/4 Sec. 4 T 22 N, R 11E W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic Industrial Municipal
Irrigation Test Well Other

(4) TYPE OF WORK: Owner's number of well (if more than one) 2
New well Method: Dug Bored
Despanded Cable Driven
Reconditioned Rotary Jetted

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 480 ft. Depth of completed well 480 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6" Diam. from +1 ft to 47 ft.
Threaded 2" Diam. from 0 ft to 480 ft.
Welded " Diam. from " ft to " ft.

Perforations: Yes No
Type of perforator used.....
SIZE of perforations in. by in.
..... perforations from ft. to ft.
..... perforations from ft. to ft.
..... perforations from ft. to ft.

Screens: Yes No
Manufacturer's Name..... Model No.....
Type..... Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes No Size of gravel:
Gravel placed from ft. to

Surface seal: Yes No To what depth? 480 ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes No
Type of water? Depth of strata
Method of sealing strata off.....

(7) PUMP: Manufacturer's Name..... HP.....
Type:.....

(8) WATER LEVELS: Land-surface elevation above mean sea level..... ft.
Static level 65 ft. below top of well Date 7/3/81
Artesian pressure lbs. per square inch Date.....
Artesian water is controlled by..... (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes No If yes, by whom?.....
Yield: 100 gal./min. with ft. drawdown after hrs.
" Estimated Airlift " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test.....
Bailer test..... gal./min. with ft. drawdown after hrs.
Artesian flow..... g.p.m. Date.....
Temperature of water..... Was a chemical analysis made? Yes No

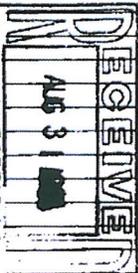
(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Top Soil	0	2
Sand, Gravel, Boulders, Water	2	44
Broken Basalt	44	55
Hard Basalt	55	125
Broken Basalt, Water 10 gpm	125	130
Hard Basalt	130	225
Broken Basalt, Water 2 gpm	225	226
Hard Basalt	226	300
Broken Basalt, Water 60 gpm	300	305
Hard Basalt	305	480

*For water temperature monitoring only,
no water will be pumped from well.

DEPARTMENT OF ECOLOGY



RECEIVED

AUG 28 1981

DEPARTMENT OF ECOLOGY
SPOKANE REGIONAL OFFICE

2" Steel Pipe Installed to full depth and cemented in place.
No PVC Liner Installed
6" Drive Shoe Installed

Work started July 1, 1981, completed July 3, 1981

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Ponderosa Drilling & Development, Inc. (Person, firm, or corporation) (Type or print)

Address E. 6010 Broadway, Spokane, WA 99206

[Signed] Joseph Booth (Well Driller)

License No. 0564 Date July 14, 1981

(USE ADDITIONAL SHEETS IF NECESSARY)

Figure 3-11 Well Log 1

SOILS, GEOLOGY, AND HYDROGEOLOGY

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

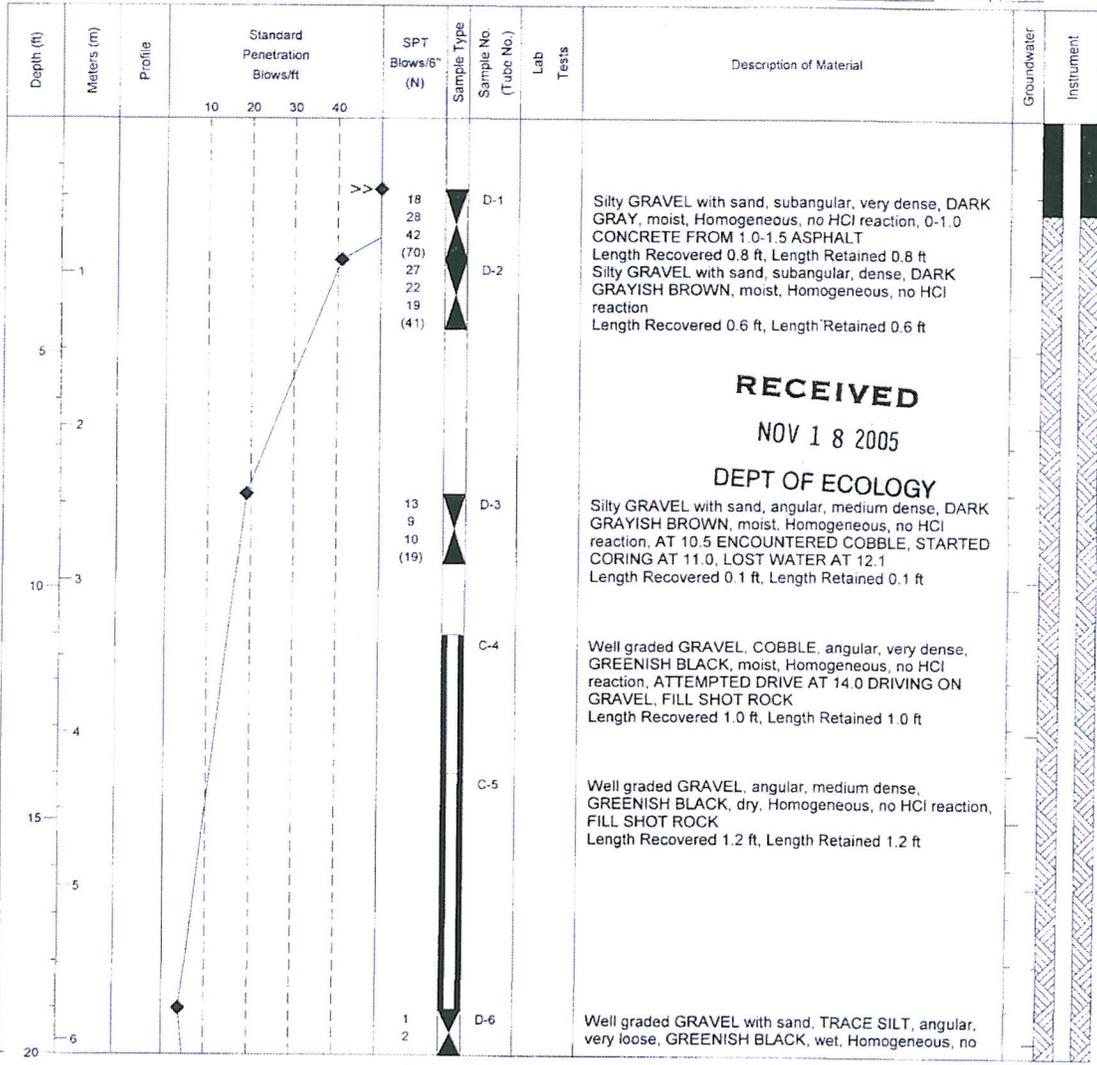


Washington State Department of Transportation
 186405 LOG OF TEST BORING

22 UESG

Job No. XL-2740 SR 90 Elevation ft (m)
 Project I-90 MP50 East Bound Cracking
 Site Address VIC SR 90 & MP 50.7
 Start October 3, 2005 Completion October 4, 2005 Well ID# AKK-344
 Station _____ Offset _____ Casing 4.0" Method Wet Rotary
 Northing _____ Easting _____ Latitude _____ Longitude _____
 County KING Subsection SW/NE Section 5 Range 11EWM Township 22N

Start Card R-62048
 HOLE No. H-1-05
 Sheet 1 of 3
 Driller ROBERT SHEPHERD Lic# 2710T
 Inspector JOE JUDD



SOILS, GEOLOGY AND HYDROGEOLOGY

RECEIVED
 NOV 18 2005
 DEPT OF ECOLOGY

Figure 3-12 Well Log 2-1

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.



Washington State
 Department of Transportation

LOG OF TEST BORING

Job No. XL-2740 SR 90 Elevation ft (m)

Start Card R-62048

HOLE No. H-1-05

Sheet 2 of 3

Project I-90 MP50 East Bound Cracking

Driller ROBERT SHEPERD Lic# 7210T

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft	SPT Blows/6" (N)	Sample Type Sample No (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
7			10 20 30 40	2 (4)	C-7		HCl reaction Length Recovered 0.2 ft, Length Retained 0.2 ft Well graded GRAVEL, angular, medium dense, GREENISH BLACK, wet, Homogeneous, no HCl reaction Length Recovered 1.3 ft, Length Retained 1.3 ft		
25				2 5 4 (9)	D-8 C-9		Well graded GRAVEL, TRACE SILT, angular, loose, GREENISH BLACK, wet, Homogeneous, no HCl reaction Length Recovered 0.2 ft, Length Retained 0.2 ft		
30				3 4 4 (8)	D-10 C-11		Well graded GRAVEL, angular, loose, GREENISH BLACK, wet, Homogeneous, no HCl reaction Length Recovered 1.2 ft, Length Retained 1.2 ft		
35				16 8 6 (14)	D-12		Silty GRAVEL with sand, angular, loose, DARK YELLOWISH BROWN, wet, Homogeneous, no HCl reaction Length Recovered 0.3 ft, Length Retained 0.3 ft		
40				RQD 20 FF 2	C-13		Well graded GRAVEL, angular, medium dense, GREENISH BLACK, wet, Homogeneous, no HCl reaction, FILL SHOT ROCK Length Recovered 1.4 ft, Length Retained 1.4 ft		
45				9 7 7 (14)	D-14		Well graded GRAVEL, TRACE SILT, angular, medium dense, DARK YELLOWISH BROWN, wet, Homogeneous, no HCl reaction Length Recovered 0.2 ft, Length Retained 0.2 ft		
				RQD 20 FF 2	C-15		ANTESITIC BASALT, GREENISH BLACK, fine grained, highly weathered, moderately strong rock, no HCl reaction. Discontinuities are moderately spaced and in poor condition, AT 36.5 ENCOUNTERED O/G., Percent Recovered 65.0%		
				RQD 74	C-16		Silty GRAVEL with sand, angular, medium dense, DARK YELLOWISH BROWN, wet, Homogeneous, no HCl reaction Length Recovered 0.4 ft, Length Retained 0.4 ft		
							ANTESITIC BASALT, GREENISH BLACK, fine grained, moderately weathered, strong rock, no HCl reaction. Discontinuities are moderately spaced and in fair condition, Percent Recovered 82.0%		
							ANTESITIC BASALT, GREENISH BLACK, fine grained, slightly weathered, moderately strong rock, no HCl		

Figure 3-13 Well Log 2-2

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.



Washington State
 Department of Transportation

LOG OF TEST BORING

Job No. XL-2740 SR 90 Elevation ft (m)

Start Card R-62048

HOLE No. H-1-05

Sheet 3 of 3

Project I-90 MP50 East Bound Cracking

Driller ROBERT SHEPERD Lic# 7210T

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft				SPT Blows/6" (N)	Sample Type Sample No (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
			10	20	30	40						
14							FF 2 2			reaction. Discontinuities are very widely spaced and in good condition, Percent Recovered 100.0%		
15							RQD 60	C-17		ANTESITIC BASALT, GREENISH BLACK, fine grained, slightly weathered, moderately strong rock, no HCl reaction. Discontinuities are very closely spaced and in good condition, Percent Recovered 100.0%		
50							FF 8 2					
16												
55										END OF BORING WATER AT 49.0, BAILED TO 53.0 NO RECHARGE.		
17										End of test hole boring at 54 ft below ground elevation. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
18												
60												
19												
65												
20												
21												
70												

SOILS, GEOLOGY AND HYDROGEOLOGY

Figure 3-14 Well Log 2-3

4 WETLAND IDENTIFICATION AND DELINEATION

Prior to conducting wetland identification and delineation field activities on the subject property, SNR Company conducted research which included the review of the NRCS soils maps to see if hydric soils are potentially present on the subject property, National Wetland Inventory Maps to determine if there wetland areas have been potentially identified on the subject property by the United States Fish and Wildlife Service, Kittitas County Wetland Maps, USGS topographic maps, USGS geologic maps, the State of Washington Fish and Wildlife Service Maps to determine if any species of interest or threatened and endangered species may be located on or in the immediate vicinity of the subject property, and several other references that are either referenced directly in the text of this report or are provided in the references section of this document. SNR found that no wetland areas, streams, or other critical areas are shown to be present on the subject property in any of the resources that were included in the research conducted for this report.

After conducting the appropriate research and conducting an initial site reconnaissance at the subject property; SNR conducted field studies on the subject property including studies that extend up to 300 feet beyond property lines where possible. This section discusses field activities, research, and other activities SNR conducted for the wetland identification and delineation of the subject property.

4.1 Research

The USF&WS Wetland Inventory Map SNR generated for the subject property and surrounding area (Figure 3-7) suggests that there are no ratable wetlands areas on or in the immediate vicinity of the subject property. The Kittitas County sensitive areas database also did not identify any wetland areas or streams on or in the immediate vicinity of the subject property (Figure 3-6). The WDFW Salmonscape map (Figure 3-8) does not show any streams or fish passages in the vicinity of the subject property.

4.2 Historical Overview of the Area

Before discovering what is now known as Snoqualmie Pass, Yakima Pass, just to the south, was used by the European settlers for crossing the Cascades. It was even sometimes called Snoqualmie Pass, which has created confusion about when the European settlers first visited Snoqualmie Pass. Yakima Pass had probably been used since the early 1800's by traders for the Hudson Bay Company, probably along with other passes just to the south.

The "real" Snoqualmie Pass was probably first mentioned by the Native Americans to Capt. George B. McClellan (after whom McClellan Butte is named) in September 1853, while he was surveying for a route across the Cascades. It was next mentioned to railroad surveyor Abiel Tinkham (after whom Tinkham road and campground near exit 42 is named) in January 1854, while he was crossing Yakima Pass (a winter crossing from the east, made successfully all the way through to Seattle). Frederick W. Lander's railroad surveying party were the first European's to undisputedly cross Snoqualmie Pass in August, 1855.

In June 1858 a group of Seattle men, probably miners, cleared a trail all the way to the pass with many miners following them. Lake Keechelus, at the time, was difficult to walk around; the old Indian trail took a winding path up a ridge and back down again, so travel was much easier by raft across the lake. There were lumber companies on the lake in later years; some of these companies would sometime ferry passengers across the lake for money. (Keechelus, by the way, means "few fish". Kachess means "many fish").

In 1862, Smallman explored Snoqualmie Pass. When he returned to Seattle, he tried to build support for the construction of a road to the Pass area.

In 1865 A.A. Denny, Jeremiah Borst, William Perkins and a Snoqualmie Indian guide visited the pass to develop plans for widening the trail to a wagon road. According to Denny, the Indian guide said that Denny may have been the first to take the exact route over Snoqualmie Pass that the road now follows. That road was finally completed in 1867.

Ferrying across Lake Keechelus was still necessary. Parts of this wagon road can still be seen near Denny Creek campground. This road never stayed in good condition for more than a few months at a time. Each winter it was severely damaged and had to be "rebuilt" every year by the first people using it.

A private company in Ellensburg finally decided to make a better quality road, and got permission to charge a toll for using it. The toll was in effect from 1884 to 1887. Tollgate Farm in North Bend was one of the toll booths.

The Northern Pacific Railroad finished a railroad across Stampede Pass (using switchbacks in the steepest sections, where the train actually had to reverse direction several times) on June 1, 1887. They decided to found a new city on Puget Sound rather than build all the way up to Seattle at greater expense and delay. The new town was called "Tacoma". Stampede Pass got its name because in the early 1880's, while the railroad was being constructed, a new foreman arrived who promised to work everyone much harder and get the most out of them. The entire crew quit on the spot and stampeded back to Seattle.

As an incentive to build the railway, the Northern Pacific received twenty 1/4 mile sections of land for every mile of track laid in Washington; alternate sections, in a checkerboard pattern. By the time the railroads were completed, 22% of Washington State was given away to railroad companies, mostly to Northern Pacific. However, NP was given their land in 1864, and didn't finish building the railroad for 23 years. They sold their land, mostly to timber companies, like the 900,000 acres sold to Weyerhaeuser in 1900 for \$6 an acre.

F.M. Guye and associates patented 12 mining claims around 1882 on the slopes of Guye Peak, now named after him, even though early geologists tried to call the mountain Slate Peak. He even built a cabin in 1883, visible from the Snow Lake trail as recently as the 1920's. It was probably he who started the mining trail up the lower slopes of Cave Ridge, but the trail apparently stopped at the fork between the Snoqualmie and Guye trails at 4000', even back in the 1920's.

On May 3, 1888, the railroad completed the "Stampede Tunnel" through the mountain, eliminating the need for switchbacks.

The first dam was made at Lake Keechelus in 1906. By this time, the road through the pass was greatly improved, although it was barely more than one lane wide (Figure 4-1 – 1906 Snoqualmie Pass Wagon Road). On March 29, 1909, the Chicago, Minneapolis & St. Paul Railroad completed a track through Snoqualmie Pass. The track generally followed the same route I90 does now. The wagon road was improved as well this year, to be able to handle the new automobile, as well as horse wagons.

A train station was built right at the summit of the pass, called "Laconia". Although it had no post office or permanent population (except for a few cabins like those of Guye and Gingras near Guye Peak it was the beginning of "civilization" at Snoqualmie Pass. The nearest post office town to the west was Tanner (east of N. Bend) and to the east, Easton. In between the two towns, were railroad stations named Ragnar, Garcia, Bandera, Laconia, and Whittier, at which passengers could embark/debark and all of which had pre-paid freight and express stations for sending and receiving packages. In fact, since the road was never plowed in winter, the train was the only way into and across the mountains for half the year.

Once roads to the summit were completed, timber harvesting increased, with clear cut tree harvesting being conducted throughout the western Cascades along the Snoqualmie River and the roads that were built. Most of the forested areas in the Snoqualmie Pass area, including the subject property, are second growth (and in some cases, third growth trees). These trees are comingled with occasional older "old growth trees, that were left to provide seed for forest regrowth. The loggers preferred that reforestation be dominated by Douglas fir trees; to promote this the clear cut areas were often burned to encourage rapid reforestation with Douglas firs preferentially over other conifers such as the silver spruce and hemlocks.

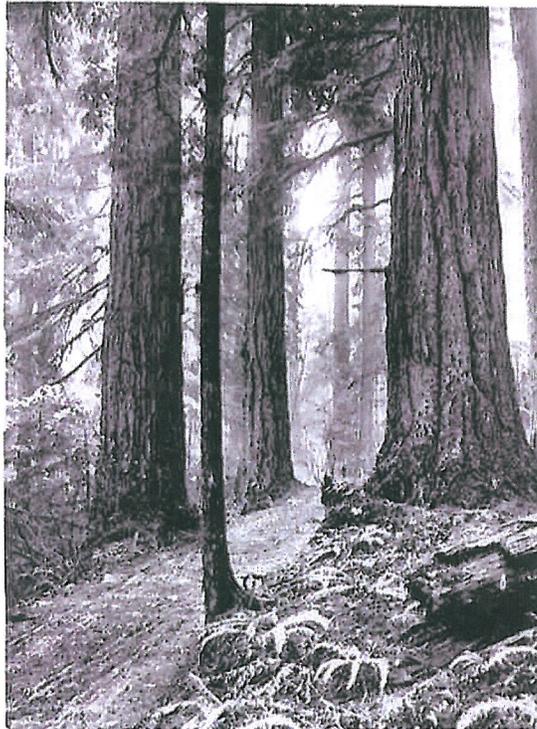


Figure 4-1 - Snoqualmie Pass Wagon Trail, 1906

An improved trail was built in 1909-10 by H.A. Noble, probably to get to the private property up the pass, or in an attempt at irrigating the east slopes of the pass. The plan was to build an irrigation system all the way down the valley and east over the pass. You can still see a remnant of the irrigation and drainage system on the Pacific Crest Trail just north of the pass where it crosses the old logging road. The trailhead was located in the pass area across from where Snoqualmie Summit Ski Area is now located.

A private businessman from Puget Sound set up a ferrying company at Lake Keechelus in 1912. An improved dam was made at the lake in 1914. The area of the lake was now about double what it had been since it was formed by a natural dam of glacier moraine deposits about 10,000 years ago. Now the shore line was much different, and much more suited for travelling around. In 1915, the road was completed around the lake, finally avoiding the need for a ferry.

Laconia prospered briefly, because in 1916 a tunnel was drilled from Hyak west to a new station, Rockdale, mostly to avoid the danger of avalanches at the higher elevations. After the tunnel began receiving train traffic, Laconia disappeared. However, the pass remained a destination point for those who enjoyed the recreational opportunities afforded in this area. This use led to the construction of cabins in the pass area for use primarily in the summer months (Figure 4-2 – Cabins at Snoqualmie Pass 1920s).

Starting in the 1931-32 winter season, the road to the pass was plowed and kept open as much as possible year round. By 1934, it was paved. This road was the current Denny Creek campground road west of the pass and the side road past the ski areas east of the pass until the 70's, I-90 was built. In 1981 the lanes west of the summit were split, and new westbound lanes were opened north of the river, on a bridge over Denny Creek 200 feet above the ground.

John Bresko, a native of Cle Elum, served as president of the Cle Elum Ski Club for ten years. Bresko began skiing in 1920. Cle Elum sponsored ski jumping tournaments in the 1920s and early 1930s. These events were "expanded in 1923" and ran for the next eleven years. Fans took the trains from Seattle and Yakima to view the events. 1931 was the biggest year, when an estimated 8,000 people attended the tournament. The Depression and the opening of the pass to cars and busses all winter meant that the pass itself became the logical center for ski competition. By 1934 the Cle Elum tournaments came to an end.

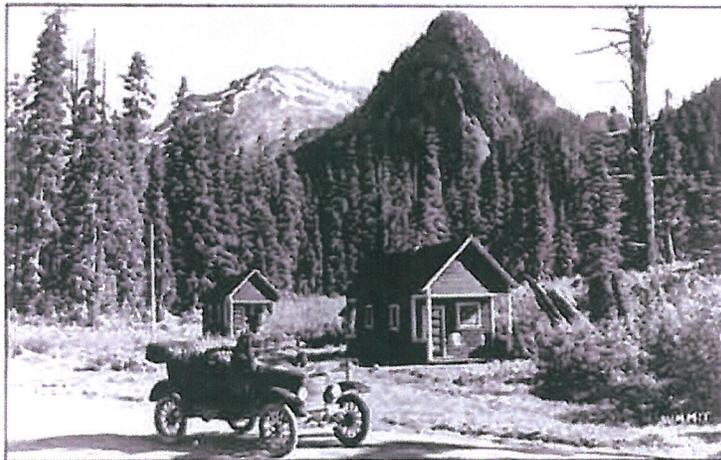


Figure 4-2 - Tourist Cabin at Snoqualmie Pass, 1920s

In the 1930s the Seattle Park Board got a permit from the Forest Service to operate a ski hill at the summit as a municipal park. Around 1939, Seattle citizens complained that the city should not be supporting a park so many miles away and the permit was transferred to Ski Lifts, Incorporated, ran by Chauncy Griggs from Tacoma. During World War II, Webb Moffatt, one of Griggs's employees, partnered with Rance Morris to buy the ski operations at Mt Rainier, Mt Baker and Snoqualmie Pass for \$3500. The Snoqualmie ski area prospered during the war and Moffatt later sold the Mt Rainier and Mt Baker operations. Snoqualmie installed lights for night skiing in 1945. The first chairlift, Thunderbird was built in 1954.

Ray Tanner opened Ski Acres in 1948 with a single chair and two rope tows. The Rock Chalet and museum was also opened in the 1940s by John E. (Jack) Preston. Preston also operated the original Snoqualmie Summit Inn. The Rock Chalet was located on the subject property until 2000 (Figure 4-3 – Rock Chalet and Museum).

The Snoqualmie Summit area is best known as a ski destination, with this heritage beginning with dedicated enthusiasts who “blazed” their own trails. Today, the area is developed with modern ski lift operations and many accommodations that make skiing the major draw to this area. This includes the development of many single family dwellings (“chalets”) that are generally used as vacation homes. These types of developments are what bound the subject property to the south, east, and west.

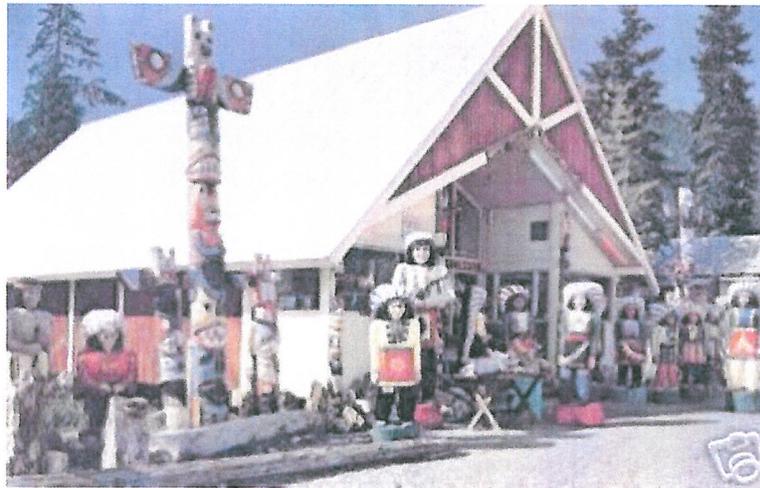


Figure 4-3 - Rock Chalet and Museum Located on the Subject Property Prior to Demolition

4.3 Wetland Field Studies

As previously discussed, SNR conducted a site reconnaissance and detailed field studies on the subject property to see if there is any evidence of naturally occurring ratable wetland areas present on the this property. The initial site reconnaissance on the subject property was conducted in December 2007. The field activities conducted during this reconnaissance were designed to collect as much information on the subject property as possible so a detailed wetland field investigation could be developed.

This initial site reconnaissance included a walk-over of the entire subject property and extended up to 300 feet beyond the property boundaries wherever possible and the collection of soil samples on the subject property to see if the conditions may be conducive for the creation of hydric soils and to classify the soil types found on the property. This reconnaissance also included a windshield survey of the area within 1 mile of the subject property and observations above the subject property.

The initial site reconnaissance included the recording of GIS information on the site using a Magellan Mobile Mapper Pro GPS with post processing data gathering turned on. Soils samples were also collected using an Oakfield Model C soil sampler. These soil samples were inspected for geologic and hydric characteristics during this site reconnaissance.

4.4 Overview

This report was prepared to summarize SNR's research and field activities and to present SNR's findings, conclusions and recommendations. The study was conducted in accordance with the requirements of both the Growth Management Act of 1990 (GMA) and the Clean Water Act of 1977. SNR routinely uses the procedures described in the *Washington State Wetland Identification and Delineation Manual*. Publication #96-94, Washington Department of Ecology, Olympia, WA, 1997, (Manual); however, SNR also follows the protocols established by Kittitas County code 17A.04(Critical Areas Designation and Development Standards) to conduct wetland identification and delineation.

The following are the procedures and protocols SNR followed, which are the same procedures required by Ecology and the USACE (and meet Kittitas County requirements):

The Ecology Manual is an adaptation of the United States Army Corps of Engineers (USACE) Wetland Manual because the only agencies authorized to implement Section 404 of the CWA are the USEPA and the USEPA's designated agency for wetlands (Section 404), the USACE. The Ecology Manual is basically identical to the USACE Manual except that Ecology has introduced some guidance for localized conditions in Washington State. In both manuals, all three wetland indicators (wetland vegetation, wetland hydrology, and hydric soils) must be present and require the wetland delineator to determine if the area being studied has been impacted by manmade disturbances.

The site hydrology and hydrogeology were evaluated in the field by a licensed hydrogeologist. Field observations were supplemented with research, and the evaluation of the geomorphology on the subject property.

4.4.1 Wetland Indicators

The three wetland indicators are naturally occurring wetland hydrology, wetland soils (hydric soils) that are formed in an active anaerobic (reducing) environment, and a preponderance of "wetland" vegetation (>50% hydrophytic vegetation). The following are from the Washington State Wetlands Identification and Delineation Manual, Ecology, March 1997:

1. Wetland Hydrology - Areas which are inundated and/or saturated to the surface for a consecutive number of days for more than 12.5 percent of the growing season are wetlands, provided the soil and vegetation parameters are met. Areas inundated or saturated to the surface for a consecutive number of days between 5 percent and 12.5 percent of the growing season in most years (see Table 3) may or may not be wetlands. Areas inundated or saturated to the surface for less than 5 percent of the growing season are non-wetlands.
2. Wetland Soils – A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. The definition and criteria for hydric soils may change periodically as a result of revisions by the National Technical Committee for Hydric Soils (NTCHS). The most recent NTCHS version should be used. A hydric soil may be either drained or undrained, and a drained hydric soil may not continue to support hydrophytic vegetation or wetland hydrology. Therefore, not all areas having hydric soils will qualify as wetlands. Only when a hydric soil supports hydrophytic vegetation and the area has indicators of wetland hydrology may the area be referred to as a wetland.
3. Wetland Vegetation - The prevalent vegetation consists of macrophytes that are typically adapted to areas having hydrologic and soil conditions described above. Hydrophytic species, due to morphological, physiological, and/or reproductive adaptation(s), have the ability to grow, effectively compete, reproduce, and/or persist in anaerobic soil conditions.

4.5 June Field Studies

The field studies conducted in June 2008 followed transects that were established from the site reconnaissance. These field activities focused heavily on soils and hydrology, although vegetation studies were included at the normal level of detail. Thirteen sample plots were studied during the field activities conducted on June 25, 2008. These sample plot studies were conducted on transects previously determined by SNR, however, other transects were followed and soil sampling was conducted on these transects to gather more information for hydrologic, hydrogeologic, and geologic interpretations.

The plot locations are recorded with a Magellan Mobile Mapper Pro with post processing data also collected. The location of the sample plots will typically be within one meter of the actual sample plot location. Subsurface soil samples are collected at each sample plot with an Oakfield Model C soils sampler at depths to 24" below the ground surface, or deeper if necessary. These studies also include the observation and documentation of the dominant vegetation within 20 feet of each plot and the surface water (and ground water) hydrology within 20 feet of the sample plot.

Vegetation types were determined in the field using *A Field Guide to the Common Wetland Plants of Western Washington & Northwestern Oregon*, Seattle Audubon Society Trailside Series, 1997 as one of the primary references⁶.

4.5.1 June 25, 2008

SNR began the field activities at approximately 11:30 AM; it was sunny with temperatures approximately 60 degrees Fahrenheit. On several places throughout the subject property, especially in shaded regions beneath the tree canopies, there was still 2-3 feet of snow. Due to record snowfall and late snow, the growing season began later than normal, with many of the herbs and deciduous saplings just beginning to emerge and leaf out when the field studies were conducted. The Summit at Snoqualmie ski area did not close for the summer season until approximately 4 weeks before the field activities were conducted.

Samples plots were conducted along the transects, with transects line locations being based on previous reconnaissance activities conducted by SNR. The initial field activities focused on the site wide transects that were conducted to obtain geologic, hydrogeologic, soils, and hydrologic information.

4.5.2 Vegetation

Alpine environments have an extremely short growing season compared to the Puget Lowlands. Approximately a quarter of the year is frost free, making it difficult for plants that are not adapted to cold conditions to thrive. Trees, shrubs and herbs are typically smaller than in the Puget Lowlands. Late blooming and leaf development can sometimes make identification difficult, especially with shrubs and deciduous trees.

According the Washington State Department of Natural Resources, State Heritage Site, the vegetation observed on the subject property is generally characteristic of the *Pseudotsuga menziesii* - *Abies lasiocarpa* cover type- Douglas-fir - Subalpine Fir Forest, abbreviated as PSME-ABLA environment (Figure 4-5). Other references suggest that this is the silver fir climatic zone.

The vegetation found on the subject property is predominately a subalpine forest environment. The dominate trees included Douglas fir (*Pseudotsuga menziesii*), Western Red Cedar (*Thuja plicata*), White Pine (*Pinus monticola*) and Pacific Silver Fir (*Abies amabilis*). At the base of the trees, maple leaf currant (*Ribes howellii*) and salmonberry (*Rubus spectabilis*) were growing; however at the time of the field visit these plants had just began to leaf out. Some of the trees appeared to be unhealthy and dying from the fairly recent intrusion of storm water onto the subject property (Figure 4-4). The canopy of the trees provided shade to allow snow to be on the ground during the June field investigation and prevent abundant herb and shrub growth in these areas.

⁶ Samples were collected and photos taken of plant species that could not be identified in the field. These samples, photos, and habitat information were then compared to the US Department of Agriculture Database for wetland plants and other plant identification resources. Plants that were believed to be potentially invasive were or noxious weeds compared to the plants listed on Washington State Noxious Weed Control Board's and the US Army Corps of Engineers' websites.

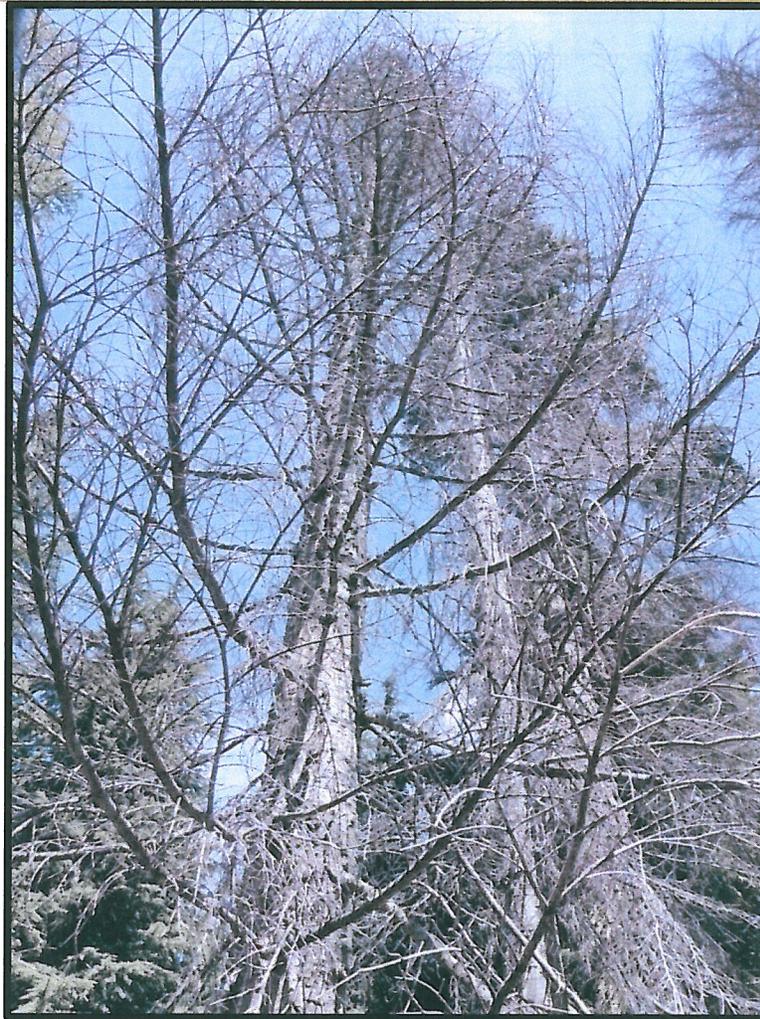


Figure 4-4 Dead Tree

The presence of uncontrolled storm water on the subject property created conditions that supported species of vegetation that prefer wetter soils to grow in the storm water ditches and other storm water diversion areas. These species included skunk cabbage (*Lysichiton americanum*). Saplings found near these storm water conveyances and facilities included willow (*Salix sp.*) and the occasional red alder (*Alnus rubra*). These plants were usually restricted to growing near the storm water facilities and ditches.

Common Name	Scientific Name	Current Indicator Status
Western Red Cedar	<i>Thuja plicata</i>	FAC
White Pine	<i>Pinus monticola</i>	FACU
Douglas Fir	<i>Pseudotsuga menziesii</i>	FACU
Pacific Silver Fir	<i>Abies amabilis</i>	FACU
Willow	<i>Salix sp.</i>	FACW-FAC
Red Alder	<i>Alnus rubra</i>	FAC

WETLAND IDENTIFICATION AND DELINEATION

Salmonberry	<i>Rubus spectabilis</i>	FAC+
Maple Leaf Current	<i>Ribes howellii</i>	NO (FACU?)
Evergreen Blackberry	<i>Rubus laciniatus</i>	FACU+
Western Sword Fern	<i>Polystichum munitum</i>	FACU
Deer Fern	<i>Blechnum spicant</i>	FAC+
Skunk Cabbage	<i>Lysichiton americanum</i>	OBL
Wild Lily of the Valley	<i>Maianthemum dilatatum</i>	FAC
Oregon Grape	<i>Berberis nervosa</i>	FACU
Bunchberry	<i>Cornus canadensis</i>	FAC
Salal	<i>Gaultheria shallon</i>	FACU
Red Huckleberry	<i>Vaccinium parvifolium</i>	FACU
Red Elderberry	<i>Sambucus racemosa</i>	FACU
Trillium	<i>Trillium ovatum</i>	FACU
Wild Strawberry	<i>Fragaria vesca</i>	N/A
Western Mountain Ash	<i>Sorbus scopulina</i>	FACU
Timber Oatgrass	<i>Danthonia intermedia</i>	FACU+
Alpine Bluegrass	<i>Poa alpine</i>	FAC
Wood Fern	<i>Dryopteris expansa</i>	FACW

It should be noted that the wetland identification and delineation forms only list the species that are dominant in each sample plot that was observed, therefore these forms will not list all of the species observed along the transects. The wetland identification and delineation forms for each sample plot are presented in Attachment C of this report.



Figure 4-5 Typical Vegetation and Snow Encountered at Subject Property

4.5.3 Soils

The sampling activities that were conducted during the field activities included the inspection and collection of subsurface soil samples by a staff geologist (up to 24" below ground surface – BGS) using an Oakfield Model C soil sampler. Soils that had characteristics that required more detailed studies were collected, bagged in one quart “Zip Lock” bags, labeled and brought to SNR’s lab for additional study, including potential additional testing⁷. Laboratory testing could include several different testing procedures, including tests for free iron, and measurements of pH and ORP, and if necessary, measurement of specific ions, using a calibrated Hanna Instruments HI 9815 pH, ORP, ISE⁸, temperature meter. Samples that were too wet to determine accurate coloring in the field were also collected and brought back to SNR’s lab for drying. All soil samples were also examined under magnification to determine the characteristics of the grains and to provide better information on the silt and clay content.

Wet soils samples were completely dried in SNR’s lab, and then were rewetted with 10% water based on the weight of the sample and were compared to the Munsell color chart under full spectrum light. This allows the most accurate determination of color, because field conditions vary and can be misleading with wet soil samples.

⁷ All potentially hydric soils are also tested with ammonium acetate and α , α Dipyriddy solution to determine if free iron is present. The soil pH and ORP values are also measured for each sample that has positive free iron results with the ammonium acetate and α , α Dipyriddy solution test. If the pH and ORP values are not clearly hydric or non-hydric, the soil sample is tested with the specific ion probes using the Hanna Instruments HI-98185 meter. If any ion is present above the control sample also collected at the same site, the soil will be considered to be hydric.

None of the soils samples collected in the sample plots had characteristics of hydric soils. There were no gleyed colors, odors, mottles or saturated soils found on or in the immediate vicinity of the subject property. The soils sampled were very dark, but the parent rock is dark for the deposits the soils are form in (basalts and andesites) if naturally dark and presence of abundant forest humus can cause the soils to appear dark. A detailed description of the soils that were observed in each sample plot is presented on the wetland identification and delineation forms in Attachment C of this report.

The soils observed on the subject property generally matched the NRCS maps and descriptions of Chinkmin Soils. At approximately 20 inches, in nearly every sample subangular to subrounded gravels were encountered. Some resistance was observed during the Oakfield Model C soil sampler borings at this depth, also suggesting that there may be cobbles at this depth. Some soil samples were observed to have felsic (light colored), ashy, moderately sorted sand which suggests that volcanic deposits are present on the subject property. In addition to the ashy sands, a small pyroclastic bomb and small sulfur cobble were found on the subject property.

4.5.4 Hydrology and Hydrogeology

A SNR licensed hydrogeologist conducted the initial hydrology/hydrogeology studies of the subject property in December of 2007. This hydrogeologist also oversaw the June 25, 2008 field studies. The field studies were supplemented to research of appropriate literature, onsite soil sampling, and observations of soils samples collected with the Oakfield sampler. SNR also obtained water well logs for wells constructed in the vicinity of the subject property from the Washington State Department of Ecology to obtain ground water information.

SNR did not observe any saturated soils; however, some areas on the subject property were inundated due to the presence of storm water flowing in storm water ditches and other storm water facilities on the subject property. SNR did not observe any natural streams or ponds to be present on the subject property.

The storm water on the subject property originates from a culvert located west of the subject property and from storm water ditches located on both sides of Guye Peak Lane. The culvert serves as a confluence for three storm water conveyances (Figure 4-6), which then flow east under Guye Peak Lane in a culvert that discharges into a storm water conveyance which discharges into a small detention pond which bounds the western edge of the subject property (Figure 4-7). This small detention pond was created by a resident by damming the storm water conveyance that originally flowed along the subject property's western property line and then turning to the east along the southern property line to an outfall into the storm water detention basin bounding the southeastern property line. This pond apparently built by a resident is too small to hold the volume of storm water that it receives (the outfall for this pond is also too small), and as a result, the pond overflows onto the subject property. Storm water ditches have been excavated on the subject property to divert some of the overflow from the western pond towards the storm water detention ditch located west of the gravel parking area.

Storm water also enters a storm water ditch the subject property from the eastern storm water ditch that bounds Guye Peak Lane. This storm water ditch passes through the subject property to the southeast and discharges into the storm water detention ditch located west of the gravel parking area.



Figure 4-6 Confluence of Three Storm Water Conveyances west of Guye Peak Lane



Figure 4-7 Storm Water Detention Pond on the Western portion of the Subject Property

Storm water from the western storm water detention pond outfall enters a shallow storm water ditch system (Figure 4-8). Fallen trees (some appear to have been intentionally felled) and debris were observed to occasionally block these ditches causing the storm water to pond in several areas of the subject property.

It is assumed that the original design of the storm water ditch system was to follow the right-of-way between the subject property and the houses along the western and southern boundaries. Based on communications with the property owner, over the years, the owners of the residences bounding the subject property have diverted this storm water back onto the subject property in attempts to prevent it from overflowing onto their property. Some of the storm water does flow along the southern property line of the subject property. This storm water and the storm water collected in the detention ditch in the eastern portion of the subject property are diverted into the storm water detention pond that bounds the southeast corner of the subject property (Figure 4-9). This larger storm water detention pond that bounds the southeastern corner of the subject property "overflows" into a culvert that is tightlined to storm water ditch that is located on the west side of SR 906. This storm water ditch is shown to eventually flow southeast and then east in a WSDOT storm water conveyance system that bounds I-90 until it eventually has an outfall on the Yakima River.

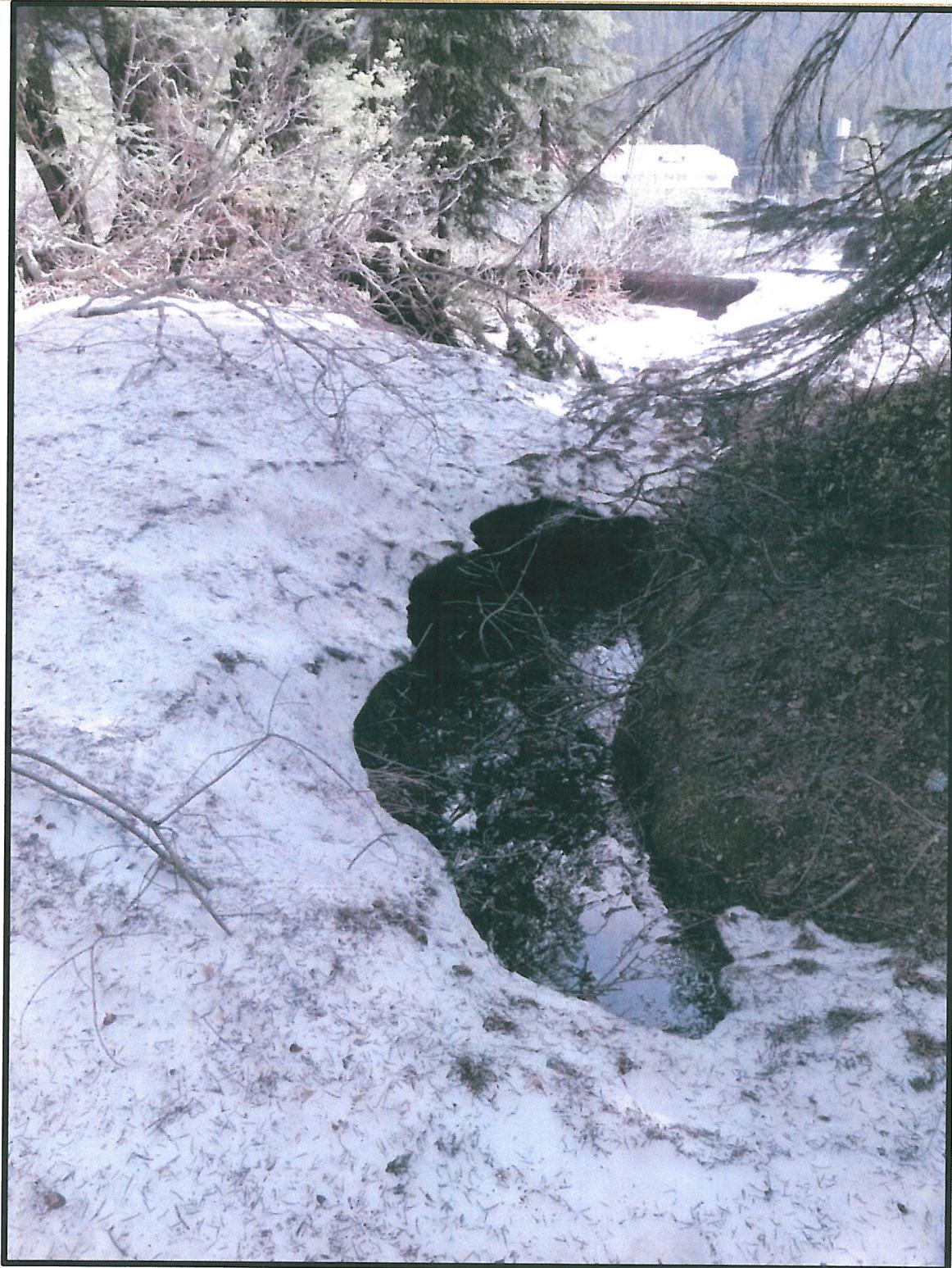


Figure 4-8 Storm Water Ditch

WETLAND IDENTIFICATION AND DELINEATION

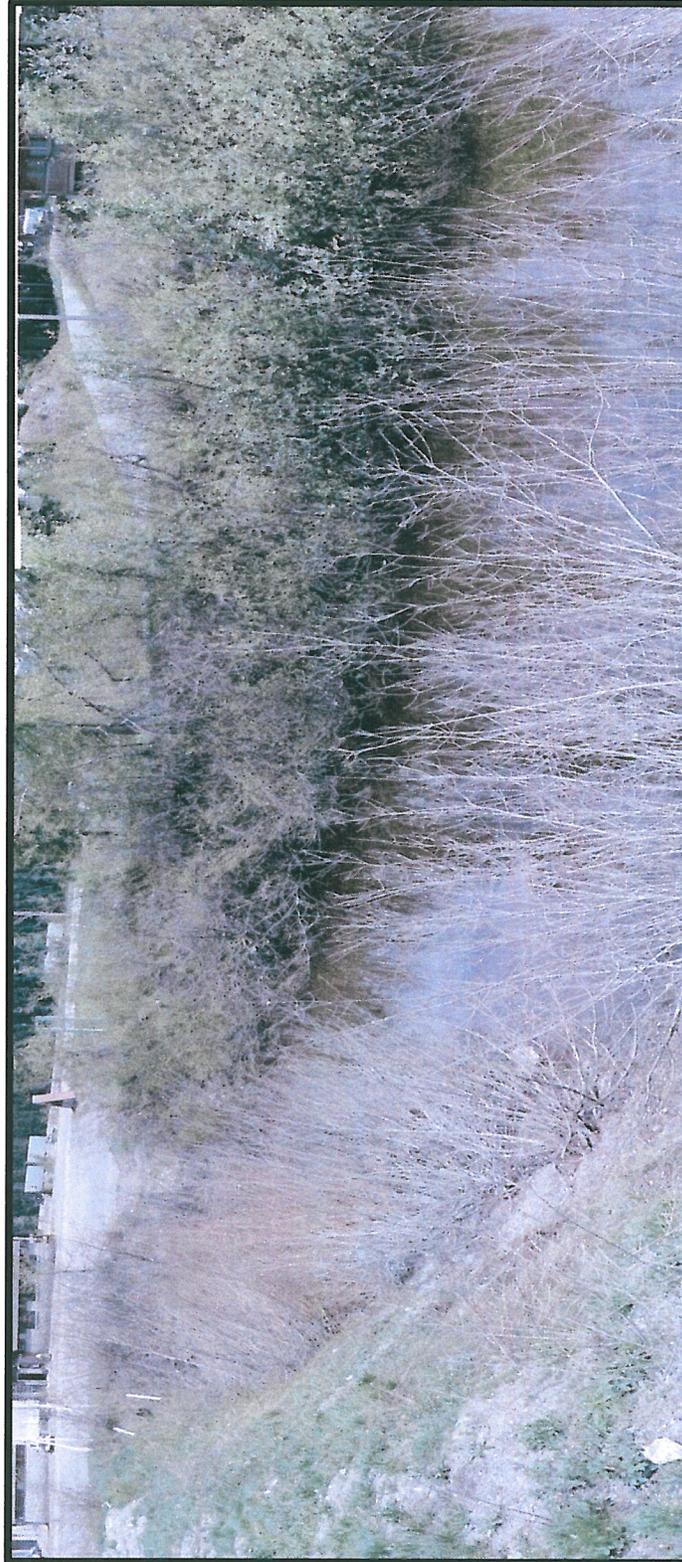


Figure 4-9 Panorama of Large Detention Pond in South East Corner of Subject Property

The storm water detention facility located on the western portion of the subject property was apparently constructed without a permit and does not meet any State or County design standards. This pond and the ancillary storm water ditches associated with the outfalls and overflow from this pond do not meet the minimum requirements for best management practice erosion and sediment controls nor do they appear to follow any engineering design. This is also the case for the storm water detention ditch located in the eastern portion of the subject property. The detention ditch and the storm water ditches that discharge into this ditch do not meet typical minimum design standards nor do they appear to be permitted facilities.

The primary hydrology on the subject property is diverted storm water in improperly designed, apparently unpermitted storm water facilities and conveyances. The diversion of this storm water across the subject property has caused some damage to the habitat on the subject property which is primarily subalpine and silver fir forest. The subject property does receive surface water from snowmelt and rain, however, it also receives significant quantities of storm water from the ski area and the storm water ditches along both sides of Guye Peak Lane.

Based on the well logs in the area, ground water is not located near the ground surface of the subject property and none of SNR's soil borings up to 30" below ground surface encountered ground water. It is anticipated that a drinking water aquifer will be present at a depth of at least 60 feet below ground surface and that the ground water in this aquifer will be present in fractured basalts. It is possible that a perched aquifer is present beneath the subject property if there is lodgment till present at depth. If this till is present it is anticipated it will be at least 15 feet below the ground surface.

In general, the soils and sedimentary deposits on the subject property are well to moderate draining. These soils are not typically conducive to developing into hydric soils. Additionally, SNR did not observe any areas where surface water appeared to be creating anaerobic conditions even in areas that are ponded, most likely due to the constant influx of storm water and that all of these ponded areas have outfalls (and the source of the water is storm water). None of the vegetation observed in the areas where wet or very moist soils were present had apparent adaptations to thriving in anaerobic conditions or hydric soils. In fact, there was no vegetation observed to be growing in the ponded areas, this vegetation was only found in the vicinity of these areas where the soils were not saturated and not inundated.

The hydrology and hydrogeology observed on the subject property is not representative of wetland hydrology. The subject property is heavy influenced by storm water diverted onto the property and in most cases this diversion is not permitted, is not associated with any easements across the subject property, and does not meet the minimum standards for storm water facilities and conveyances.

5 FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This section summarizes SNR Company's findings, conclusions, and recommendations based on research and field studies conducted on the subject property. These findings are based on an interpretation of the cumulative research and field observations. The conclusions are based on the findings related to the County, State and Federal regulations, primarily those regulations and ordinances that pertain to the Critical/Sensitive Areas identified in the State of Washington Growth Management Act of 1990.

SNR Company conducted this Wetland Identification Study in general accordance with the following:

- The United States Environmental Protection Agency (Sections 402, 403, and 404 of the Clean Water Act);
- Washington State Department of Ecology regulations - Chapter 90.48 RCW, Water pollution control; Chapter 173-201A WAC, Water quality standards for surface waters of the state of Washington; Chapter 36.70A RCW, Growth management — planning by selected counties and cities; Chapter 173-200 WAC, Water Quality Standards for Surface Waters of the State of Washington; and Chapter 173-204, Sediment Management Standards.
- Kittitas County, Title 17A Critical Areas and Title 12.6 Storm Water Management Standards and Guidelines.
- The State of Washington Wetlands Identification and Delineation Manual (Manual), Washington State Department of Ecology, 1997.
- The Corps of Engineers Wetland Delineation Manual, Environmental Laboratory, 1987⁹.

5.1 Findings

There are no naturally occurring wetlands or streams on or in the near vicinity of the subject property. There is no ground water within 30 inches of the ground surface and the surface water present on the subject property is primarily derived from storm water that has been diverted onto the subject property and not from naturally occurring wetland hydrology. The vegetation on the subject property does not include dominant assemblages of hydrophytic vegetation. None of the soils sampled collected on the subject property were observed to exhibit hydric soils characteristics. The low chroma colors observed in some of the soil samples were influenced by charcoal in the soil the abundance of forest humus above the soils and dark parent material derived from basalts and andesite deposits in the area where the subject property is located.

5.2 Conclusions

Based on SNR's research and field studies, there were no ratable wetland areas identified to be present on or within 300 feet of the subject property's property lines. Additionally, research and field studies did not identify any streams to be present on or within 300 feet of the subject property's property lines.

⁹ Although the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region was finalized in April 2008, SNR did not include the guidance from this manual in these studies because these studies began before this document was finalized for use and became required in May 2008.

The storm water facilities and conveyances on the subject property do not appear to be permitted nor could SNR find any easements associated with subject property's deed that would allow the construction of the storm water management facilities for storm water that has been diverted onto the subject property (except the channel which bounds the southern property line, which follows an inferred easement/right of way). The storm water facilities and conveyances on the subject property do not meet the minimum requirements established by State regulations and County ordinances. Additionally, it is unlikely that the discharges from these storm water conveyances into the detention pond that bounds the southeastern portion of the subject property are covered by the detention pond's NPDES permit. Additionally, it is not apparent that the storm water facilities and ditches have been designed with the required BMP erosion and sediment controls nor is it evident that these facilities and ditches have been periodically maintained. The storm water facilities will need to be addressed to comply with County ordinances, State laws, and Federal regulations.

5.3 Recommendations

The western storm water detention pond will need to be replaced with a property designed facility that is permitted with Kittitas County. The storm water ditches associated with this pond should follow the inferred easements and right of way that are associated with the property lines (as the originally did). The required permits should be obtained and it should be determined if the NPDES permit for the detention pond bounding the southeastern portion of the subject property includes the storm water discharges from these offsite sources. Additionally, all storm water ditches and ponds should have BMP erosion and sediment controls.

Sincerely,

SNR COMPANY



Laura Freed
Staff Geologist

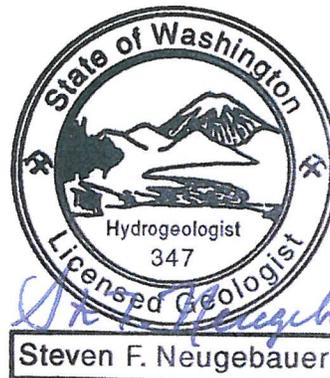
These studies and this report have either been prepared directly by me or under my direct supervision. If you have any questions or require more information, please contact me at 425-788-3015 at your convenience.

SNR Company



Steven F. Neugebauer – LHG, LEG RG, PG, REA, CWP
Principal Hydrogeologist/Engineering Geologist
State of Washington License Number 00347, Expires 08/01/2009

Date: 08/13/2008



6 LIMITATIONS

The field studies and research conducted for this Study of the Subject Property have been conducted in general accordance standard accepted practices for conducting Critical Areas Studies and for the identification of potential wetland areas. This type of investigation is undertaken with the calculated risk that the presence, full nature, and extent of potential wetland and other critical areas may not be revealed by visual observation and field measurements alone. Although a thorough site reconnaissance was conducted and field studies performed in accordance with standard accepted procedures and employing a professional standard of care, no warranty is given; either expressed or implied that potential unobservable critical areas are not present on the site. Therefore, the data obtained are clear and accurate only to the degree implied by the sources and methods used.

The findings presented in this report were based upon field observations and the review of available, reasonably ascertainable data. SNR's observations describe only the conditions present at the time of this investigation. The data reviewed and observations made are limited to accessible areas and currently available records searched. SNR cannot guarantee the completeness or accuracy of the files, maps, and records reviewed. Additionally, in evaluating the property, SNR has relied in good faith upon representations and information provided by individuals noted in the report with respect to present operations and existing property conditions, and the historic uses of the property.

It must also be understood that changing circumstances in the property use, proposed property use, subject site zoning, and changes on the other nearby properties can alter the validity of SNR's conclusions and information contained in this report. Therefore, the data obtained are clear and accurate only to the degree implied by the sources and methods used, and should be considered reliable for a period no longer than one year from the date of report submission.

This report is provided for the exclusive use of the client noted on the cover page and shall be subject to the terms and conditions in the applicable service agreement between the client and SNR. Any third party use of this report, including use by Client's lender, shall also be subject to the terms and conditions in the service agreement between the client and SNR, governing the work. The unauthorized use of, reliance on, or release of the information contained in this report without the expressed written consent of SNR is strictly prohibited and will be without risk or liability to SNR.

Conclusions and recommendations contained in this report are based on the evaluation of information made available during the course of this Study. It is not warranted that such data cannot be superseded by future geological, environmental, legal, geotechnical, or technical developments

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ATTACHMENT A – SITE MAP WITH TRANSECTS AND PLOT LOCATIONS

ATTACHMENT A - SITE MAP WITH TRANSECTS AND PLOTS

WILSON ENGINEERING AND DESIGN CONSULTANTS
 Environmental Services
 5000 Lake Park, WA
 Kittitas County Parcel Number: 142436

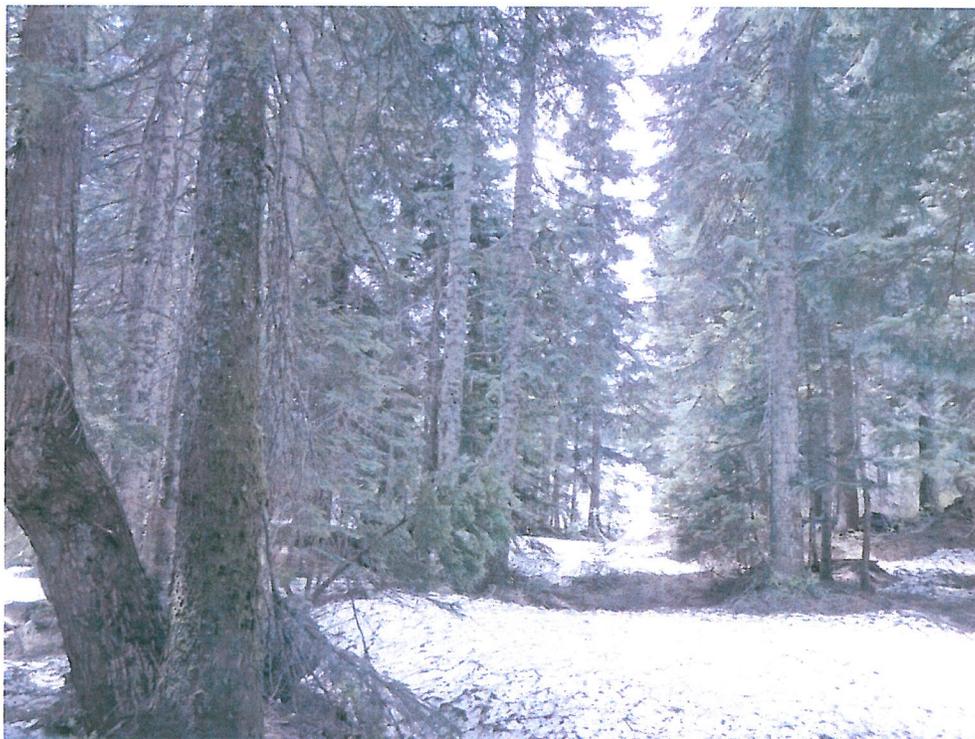


ATTACHMENT B – SITE PHOTOGRAPHS

ATTACHMENT B – SITE PHOTOGRAPHS



Storm Water Ditch on Subject Property



Typical Vegetation Present on the Subject Property



Ponded Storm Water on the Subject Property



Ponded Storm Water on the Subject Property

ATTACHMENT B – SITE PHOTOGRAPHS



Sparse Vegetation at the Base of Conifers



Ponded Storm Water at the Base of Douglas Firs



Ponded Storm Water on Subject Property – Note the Tree Blocking the Storm Water Flow is Believed to have Died from Storm Water Inundation

ATTACHMENT B – SITE PHOTOGRAPHS



Dying Trees Causing Storm Water to Pond



Storm Water Conveyance that Discharges to the Western Detention Pond

ATTACHMENT B – SITE PHOTOGRAPHS



Storm Water Ditch Bounding the Southern Property Line



Storm Water Ditch Bounding the Southern Property Line

ATTACHMENT B – SITE PHOTOGRAPHS



Tightline Outfall to the Storm Water Ditch Bounding the West Side of SR 906 from the Detention Pond Bounding the Southeast Corner of the Subject Property

ATTACHMENT C – WETLAND DELINEATION FORMS

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Snoqualmie Summit</u>	Date: <u>6/25/08</u>
Applicant/Owner: <u>Evo Properties</u>	County: <u>Kittitas</u>
Investigator: <u>Laura Freed, Eric Castleberry</u>	State: <u>WA</u>
Do Normal Circumstances exist on the site? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>T1/T3-P1</u>
Is the site significantly disturbed (Atypical Situation)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect ID: <u>T1/T3</u>
Is Area a Potential Problem Area? (if needed, explain on reverse) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>P1</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Western Red Cedar <i>Thuja plicata</i>	Tree	FAC	8		
2 White Pine <i>Pinus monticola</i>	Tree	FACU	9		
3 Douglas Fir <i>Pseudotsuga menziesii</i>	Tree	FACU	10		
4 Maple Leaf Currant <i>Ribes howellii</i>	Shrub	NI	11		
5			12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 20%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other <input type="checkbox"/> No recorded data available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (explain in remarks)
Field Observations: Depth of Surface Water: <u>N/A</u> (In.) Depth to Free Water in Pit: <u>N/A</u> (In.) Depth to Saturated Soil: <u>N/A</u> (In.)	Remarks:	

SOILS

Map Unit Name (Series and Phase): <u>Chinkmin</u>	Drainage Class: Moderately well drained				
Taxonomy (Subgroup): <u>Cryods</u>	Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-4	NONE	N/A	N/A	N/A	Forest duff
4-12	A	7.5YR 3/2	N/A	N/A	Dark brown, wet, clayey, well sorted, round, fine sandy, silt with inclusions of brownish red clay
12-18	A	10YR 3/3	N/A	N/A	Dark brown, wet, moderately sorted, subrounded, small gravely silt
18-24	A	10YR 3/3	N/A	N/A	Similar to above, but with inclusions of wet, reddish, well sorted, rounded sand
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol	<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils			
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Listed on National Hydric Soils List			
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Concretions	<input type="checkbox"/> Listed on Local Hydric Soils List			
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Organic Streaking in Sandy Soils	<input type="checkbox"/> Other (explain in remarks)			
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Remarks:	

Form Content Approved by HQUSACE 3/92

P1

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Snoqualmie Summit</u>	Date: <u>6/25/08</u>
Applicant/Owner: <u>Evo Properties</u>	County: <u>Kittitas</u>
Investigator: <u>Laura Freed, Eric Castleberry</u>	State: <u>WA</u>
Do Normal Circumstances exist on the site? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>T1-P2</u>
Is the site significantly disturbed (Atypical Situation)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect ID: <u>T1</u>
Is Area a Potential Problem Area? (if needed, explain on reverse) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>P2</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 White Pine <i>Pinus monticola</i>	Tree	FACU	8		
2 Red Currant <i>Ribes sanguineum</i>	Shrub	NI	9		
3 Douglas Fir <i>Pseudotsuga menziesii</i>	Tree	FACU	10		
4 Maple Leaf Currant <i>Ribes howellii</i>	Shrub	NI	11		
5			12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 0%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other <input type="checkbox"/> No recorded data available Field Observations: Depth of Surface Water: <u>N/A</u> (In.) Depth to Free Water in Pit: <u>N/A</u> (In.) Depth to Saturated Soil: <u>N/A</u> (In.)	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (explain in remarks)
Remarks:	

SOILS

Map Unit Name (Series and Phase): <u>Chinkmin</u>	Drainage Class: Moderately well drained	Circle Yes No			
Taxonomy (Subgroup): <u>Cryods</u>	Field Observations Confirm Mapped Type? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
Profile Description					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc
0-3	NONE	N/A	N/A	N/A	Forest duff
3-6	A	10YR 3/2	N/A	N/A	Dark reddish brown, moist, silty, poorly sorted, subrounded, fine to medium sand with roots
6-12	A	10YR 3/2	N/A	N/A	Dark reddish brown, moist, clayey, silty, poorly sorted, subrounded, fine to medium sand
12-18	A	10YR 3/2	N/A	N/A	Dark reddish brown, very moist, clayey, silty, poorly sorted, subrounded, fine to medium sand
18-24	A	10YR 3/4	N/A	N/A	Dark brown, wet, clayey, moderately sorted, angular to subangular, small gravelly silt
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol	<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils			
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Listed on National Hydric Soils List			
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Concretions	<input type="checkbox"/> Listed on Local Hydric Soils List			
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Organic Streaking in Sandy Soils	<input type="checkbox"/> Other (explain in remarks)			
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Remarks:	

Form Content Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Snoqualmie Summit</u>		Date: <u>6/25/08</u>
Applicant/Owner: <u>Evo Properties</u>		County: <u>Kittitas</u>
Investigator: <u>Laura Freed, Eric Castleberry</u>		State: <u>WA</u>
Do Normal Circumstances exist on the site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>T1/T2-P3</u>
Is the site significantly disturbed (Atypical Situation)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect ID: <u>T1/T2</u>
Is Area a Potential Problem Area? (if needed, explain on reverse)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>P3</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 White Pine <i>Pinus monticola</i>	Tree	FACU	8		
2 Western Red Cedar <i>Thuja plicata</i>	Tree	FACU	9		
3 Maple Leaf Currant <i>Ribes howellii</i>	Shrub	NI	10		
4 Wild Lily of the Valley <i>Maianthemum dilatatum</i>	Herb	FAC	11		
5 Sword Fern <i>Polystichum munitum</i>	Fem	FACU	12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 20%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other <input type="checkbox"/> No recorded data available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (explain in remarks)
Field Observations: Depth of Surface Water: <u>N/A</u> (In.) Depth to Free Water in Pit: <u>N/A</u> (In.) Depth to Saturated Soil: <u>N/A</u> (In.)		
Remarks:		

SOILS

Map Unit Name (Series and Phase): <u>Chinkmin</u>	Drainage Class: Moderately well drained				
Taxonomy (Subgroup): <u>Cryods</u>	Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No				
Profile Description					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-6	NONE	N/A	N/A	N/A	Forest duff
6-12	NONE	N/A	N/A	N/A	Grayish clayey, moist, well sorted, rounded, very fine ashy sand
12-18	A	10YR 4/6	N/A	N/A	Dark brownish gray, wet, clayey, poorly sorted, angular to subangular, small gravelly, poorly sorted, subrounded very fine to medium sandy silt
18-24	A	10Y 3/3	N/A	N/A	Dark brown, wet, poorly sorted, subrounded, small to medium sandy, angular to subangular, moderately sorted, small gravelly, silt
Hydric Soil Indicators: <input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime					
<input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors <input type="checkbox"/> Concretions <input type="checkbox"/> Organic Streaking in Sandy Soils					
<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Other (explain in remarks)					
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Hydric Soils Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Remarks:			

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Snoqualmie Summit</u>	Date: <u>6/25/08</u>
Applicant/Owner: <u>Evo Properties</u>	County: <u>Kittitas</u>
Investigator: <u>Laura Freed, Eric Castleberry</u>	State: <u>WA</u>
Do Normal Circumstances exist on the site? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>T1-P4</u>
Is the site significantly disturbed (Atypical Situation)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect ID: <u>T1</u>
Is Area a Potential Problem Area? (if needed, explain on reverse) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>P4</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Douglas Fir <i>Pseudotsuga menziesii</i>	Tree	FACU	8		
2 White Pine <i>Pinus monticola</i>	Tree	FACU	9		
3 Maple Leaf Currant <i>Ribes howellii</i>	Shrub	NI	10		
4 Salmonberry <i>Rubus spectabilis</i>	Shrub	FAC+	11		
5 Wild Lily of the Valley <i>Maianthemum dilatatum</i>	Herb	FAC	12		
6 Sword Fern <i>Polystichum munitum</i>	Fern	FACU	13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 45%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other <input type="checkbox"/> No recorded data available Field Observations: Depth of Surface Water: <u>N/A</u> (In.) Depth to Free Water in Pit: <u>N/A</u> (In.) Depth to Saturated Soil: <u>N/A</u> (In.)	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (explain in remarks)
Remarks:		

SOILS

Map Unit Name (Series and Phase): <u>Chinkmin</u>	Drainage Class: Moderately well drained				
Taxonomy (Subgroup): <u>Cryods</u>	Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-3	NONE	N/A	N/A	N/A	Forest duff
3-6	A	10YR 3/4	N/A	N/A	Dark brown, moist clayey silt
6-12	NONE	N/A	N/A	N/A	Red ashy, moderately well sorted, subrounded medium sand
12-18	A	5YR 3/3	N/A	N/A	Dark brown, wet, clayey, silt with inclusions of red, moderately well sorted, subrounded medium sand
18-24	B	10YR 3/3	N/A	N/A	Reddish brown, wet, moderately sorted, angular to subangular, small, gravelly silt
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol	<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils			
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Listed on National Hydric Soils List			
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Concretions	<input type="checkbox"/> Listed on Local Hydric Soils List			
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Organic Streaking in Sandy Soils	<input type="checkbox"/> Other (explain in remarks)			
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Remarks:	

Form Content Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Snoqualmie Summit</u>		Date: <u>6/25/08</u>
Applicant/Owner: <u>Evo Properties</u>		County: <u>Kittitas</u>
Investigator: <u>Laura Freed, Eric Castleberry</u>		State: <u>WA</u>
Do Normal Circumstances exist on the site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>T3-P5</u>
Is the site significantly disturbed (Atypical Situation)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect ID: <u>T3</u>
Is Area a Potential Problem Area? (if needed, explain on reverse)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>P5</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Douglas Fir <i>Pseudotsuga menziesii</i>	Tree	FACU	8		
2 Pacific Silver Fir <i>Abies amabilis</i>	Tree	FACU	9		
3 Maple Leaf Currant <i>Ribes howellii</i>	Shrub	NI	10		
4 Salmonberry <i>Rubus spectabilis</i>	Shrub	FAC+	11		
5 Moss	Moss		12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 50%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other <input type="checkbox"/> No recorded data available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (explain in remarks)
Field Observations: Depth of Surface Water: <u>N/A</u> (In.) Depth to Free Water in Pit: <u>6</u> (In.) Depth to Saturated Soil: <u>N/A</u> (In.)		
Remarks: <u>Water in pit was from wet soils and not groundwater because it entered from the sides of the pit</u>		

SOILS

Map Unit Name (Series and Phase): <u>Chirkmin</u>	Drainage Class: <u>Moderately well drained</u>	Circle <u>Yes</u> No																														
Taxonomy (Subgroup): <u>Cryods</u>	Field Observations Confirm Mapped Type? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No																															
Profile Description: <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Depth (inches)</th> <th>Horizon</th> <th>Matrix Color (Munsell Moist)</th> <th>Mottle Colors (Munsell Moist)</th> <th>Mottle Abundance/ Size/Contrast</th> <th>Texture, Concretions, Structure, etc</th> </tr> </thead> <tbody> <tr> <td>0-5</td> <td>NONE</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>Forest duff</td> </tr> <tr> <td>5-12</td> <td>A</td> <td>10YR 2/2</td> <td>N/A</td> <td>N/A</td> <td>Dark brown, wet, moderately well sorted, subrounded, fine sandy silt with roots</td> </tr> <tr> <td>12-18</td> <td>A</td> <td>10YR 2/2</td> <td>N/A</td> <td>N/A</td> <td>Dark brown wet clayey, moderately sorted, angular to subangular, small gravelly, moderately well sorted, subrounded, fine sandy silt</td> </tr> <tr> <td>18-24</td> <td>A</td> <td>10YR 3/3</td> <td>N/A</td> <td>N/A</td> <td>Dark brown, wet, moderately sorted, subangular to angular, small gravelly silt</td> </tr> </tbody> </table>			Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc	0-5	NONE	N/A	N/A	N/A	Forest duff	5-12	A	10YR 2/2	N/A	N/A	Dark brown, wet, moderately well sorted, subrounded, fine sandy silt with roots	12-18	A	10YR 2/2	N/A	N/A	Dark brown wet clayey, moderately sorted, angular to subangular, small gravelly, moderately well sorted, subrounded, fine sandy silt	18-24	A	10YR 3/3	N/A	N/A	Dark brown, wet, moderately sorted, subangular to angular, small gravelly silt
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc																											
0-5	NONE	N/A	N/A	N/A	Forest duff																											
5-12	A	10YR 2/2	N/A	N/A	Dark brown, wet, moderately well sorted, subrounded, fine sandy silt with roots																											
12-18	A	10YR 2/2	N/A	N/A	Dark brown wet clayey, moderately sorted, angular to subangular, small gravelly, moderately well sorted, subrounded, fine sandy silt																											
18-24	A	10YR 3/3	N/A	N/A	Dark brown, wet, moderately sorted, subangular to angular, small gravelly silt																											
Hydric Soil Indicators: <input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime																																
<input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors <input type="checkbox"/> Concretions <input type="checkbox"/> Organic Streaking in Sandy Soils																																
<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Other (explain in remarks)																																
Remarks: <u>Abundant forest humus and dark parent material cause soils to appear extremely dark</u>																																

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Hydric Soils Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Remarks:			

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Snoqualmie Summit</u>	Date: <u>6/25/08</u>
Applicant/Owner: <u>Evo Properties</u>	County: <u>Kittitas</u>
Investigator: <u>Laura Freed, Eric Castleberry</u>	State: <u>WA</u>
Do Normal Circumstances exist on the site? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>T3-P6</u>
Is the site significantly disturbed (Atypical Situation)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect ID: <u>T3</u>
Is Area a Potential Problem Area? (if needed, explain on reverse) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>P6</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Douglas Fir <i>Pseudotsuga menziesii</i>	Tree	FACU	8		
2 Willow <i>Salix sp.</i>	Tree	FAC- FACW	9		
3 Red Alder <i>Alnus rubra</i>	Tree	FAC	10		
4 Maple Leaf Currant <i>Ribes howellii</i>	Shrub	NI	11		
5			12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 50%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other <input type="checkbox"/> No recorded data available Field Observations: Depth of Surface Water: <u>N/A</u> (In.) Depth to Free Water in Pit: <u>N/A</u> (In.) Depth to Saturated Soil: <u>N/A</u> (In.)	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (explain in remarks)
Remarks:	

SOILS

Map Unit Name (Series and Phase): <u>Chinkmin</u>	Drainage Class: Moderately well drained				
Taxonomy (Subgroup): <u>Cryods</u>	Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No				
Profile Description					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-12	A	10YR 3/3	N/A	N/A	Lightly brown, slightly moist, silty, moderately sorted, subrounded small gravelly, poorly sorted, subrounded, fine to medium sand with roots
12-18	A	10YR 3/3	N/A	N/A	Same as above, with inclusions of ashy gray, moderately sorted, subrounded sand
18-24	NONE	N/A	N/A	N/A	Very light gray, moist, clayey, well sorted, subrounded, medium sand
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors <input type="checkbox"/> Concretions <input type="checkbox"/> Organic Streaking in Sandy Soils	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Other (explain in remarks)			
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Remarks:	

Form Content Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Snoqualmie Summit</u>		Date: <u>6/25/08</u>
Applicant/Owner: <u>Evo Properties</u>		County: <u>Kittitas</u>
Investigator: <u>Laura Freed, Eric Castleberry</u>		State: <u>WA</u>
Do Normal Circumstances exist on the site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>T3</u>
Is the site significantly disturbed (Atypical Situation)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect ID: <u>T3-P7</u>
Is Area a Potential Problem Area? (if needed, explain on reverse)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>P7</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Douglas Fir <i>Pseudotsuga menziesii</i>	Tree	FACU	8		
2 Pacific Silver Fir <i>Abies amabilis</i>	Tree	FACU	9		
3 Maple Leaf Currant <i>Ribes howellii</i>	Shrub	NI	10		
4			11		
5			12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 0%

Remarks: Abundant forest canopy and snow caused minimum vegetation to be near sampling point

HYDROLOGY

<input type="checkbox"/> Recorded Data (describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other <input type="checkbox"/> No recorded data available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (explain in remarks)
Field Observations: Depth of Surface Water: <u>N/A</u> (In.) Depth to Free Water in Pit: <u>N/A</u> (In.) Depth to Saturated Soil: <u>N/A</u> (In.)		
Remarks:		

SOILS

Map Unit Name (Series and Phase): <u>Chinkmin</u>	Drainage Class: <u>Moderately well drained</u>				
Taxonomy (Subgroup): <u>Cryods</u>	Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No				
Profile Description					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-6	N/A	N/A	N/A	N/A	Forest duff
6-12	A	7.5YR 3/3	N/A	N/A	Brown, wet, silty, well sorted, subrounded, fine sand
12-18	A	7.5YR 3/4	N/A	N/A	Barely filling auger. Dark brown, wet, clayey, moderately sorted, subrounded-subangular small gravelly, poorly sorted, subrounded fine to medium sandy silt
18-24	A	7.5YR 3/3	N/A	N/A	Barely filling auger, dark brown, wet, moderately sorted, angular to subangular, small gravelly silt
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol	<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils			
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Listed on National Hydric Soils List			
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Concretions	<input type="checkbox"/> Listed on Local Hydric Soils List			
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Organic Streaking in Sandy Soils	<input type="checkbox"/> Other (explain in remarks)			
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Hydric Soils Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Remarks:			

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Snoqualmie Summit</u>		Date: <u>6/25/08</u>
Applicant/Owner: <u>Evo Properties</u>		County: <u>Kititas</u>
Investigator: <u>Laura Freed, Eric Castleberry</u>		State: <u>WA</u>
Do Normal Circumstances exist on the site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>T2-P8</u>
Is the site significantly disturbed (Atypical Situation)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect ID: <u>T2</u>
Is Area a Potential Problem Area? (if needed, explain on reverse)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>P8</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Douglas Fir <i>Pseudotsuga menziesii</i>	Tree	FACU	8		
2 Maple Leaf Currant <i>Ribes howellii</i>	Shrub	NI	9		
3			10		
4			11		
5			12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 0%

Remarks: Abundant forest canopy and snow on ground surface caused minimal vegetation to be identified near sampling point

HYDROLOGY

<input type="checkbox"/> Recorded Data (describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other <input type="checkbox"/> No recorded data available Field Observations: Depth of Surface Water: <u>N/A</u> (In.) Depth to Free Water in Pit: <u>N/A</u> (In.) Depth to Saturated Soil: <u>N/A</u> (In.)	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (explain in remarks)
Remarks:	

SOILS

Map Unit Name (Series and Phase): <u>Chinkmin</u>		Drainage Class: Moderately well drained Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No			
Taxonomy (Subgroup): <u>Cryods</u>					
Profile Description					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-4	NONE	N/A	N/A	N/A	Forest duff
4-12	NONE	N/A	N/A	N/A	Light gray, moist, poorly sorted, subangular to subrounded, fine to medium sand
12-24	B	10YR 4/3	N/A	N/A	Dark reddish brown, moist, silty, moderately sorted, subrounded to subangular, small gravelly, poorly sorted, subrounded, fine to medium sand with charcoal
Hydic Soil Indicators:					
<input type="checkbox"/> Histosol		<input type="checkbox"/> Reducing Conditions		<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils	
<input type="checkbox"/> Histic Epipedon		<input type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Listed on National Hydic Soils List	
<input type="checkbox"/> Sulfidic Odor		<input type="checkbox"/> Concretions		<input type="checkbox"/> Listed on Local Hydic Soils List	
<input type="checkbox"/> Aquic Moisture Regime		<input type="checkbox"/> Organic Streaking in Sandy Soils		<input type="checkbox"/> Other (explain in remarks)	
Remarks: Charcoal will cause the soil to appear darker					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Hydic Soils Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Remarks:			

Form Content Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Snoqualmie Summit</u>		Date: <u>6/25/08</u>
Applicant/Owner: <u>Evo Properties</u>		County: <u>Kititas</u>
Investigator: <u>Laura Freed, Eric Castleberry</u>		State: <u>WA</u>
Do Normal Circumstances exist on the site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>T1-P9</u>
Is the site significantly disturbed (Atypical Situation)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect ID: <u>T1</u>
Is Area a Potential Problem Area? (if needed, explain on reverse)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>P9</u>

VEGETATION

1	Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1	White Pine <i>Pinus monticola</i>	Tree	FACU	8		
2	Western Red Cedar <i>Thuja plicata</i>	Tree	FAC	9		
3	Douglas Fir <i>Pseudotsuga menziesii</i>	Tree	FACU	10		
4	Salmonberry <i>Rubus spectabilis</i>	Shrub	FACU+	11		
5	Maple Leaf Currant <i>Ribes howellii</i>	Shrub	NI	12		
6				13		
7				14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 50%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other <input type="checkbox"/> No recorded data available		Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands		Secondary Indicators (2 or more required) <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (explain in remarks)	
Field Observations: Depth of Surface Water: <u>N/A</u> (In.) Depth to Free Water in Pit: <u>N/A</u> (In.) Depth to Saturated Soil: <u>N/A</u> (In.)		Remarks:			

SOILS

Map Unit Name (Series and Phase): <u>Chinkmin</u>		Drainage Class: Moderately well drained	Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No		
Taxonomy (Subgroup): <u>Cryods</u>					
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-6	NONE	N/A	N/A	N/A	Forest duff
6-12	A	10YR 3/3	N/A	N/A	Dark reddish brown, moist, slightly plastic, soft silty clay with inclusions of red poorly sorted, subrounded, fine to medium sand with charcoal
12-18	A	10YR 3/3	N/A	N/A	Dark reddish brown, moist, slightly plastic, soft silty clay with inclusions of red poorly sorted, subrounded, fine to medium sand with charcoal
18-24	A	10YR 3/2	N/A	N/A	Barely filling the auger, dark brown, wet, silty moderately sorted, subangular to angular small gravelly, poorly sorted, subrounded, fine to medium sand
Hydric Soil Indicators: <input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors <input type="checkbox"/> Concretions <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Other (explain in remarks)					
Remarks: <u>Charcoal will cause the soil to appear darker</u>					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Hydric Soils Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Remarks:			

DATA FORM
ROUTINE WETLAND DETERMINATION
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Project Site: <u>Snoqualmie Summit</u>	Date: <u>6/25/08</u>
Applicant/Owner: <u>Evo Properties</u>	County: <u>Kittitas</u>
Investigator: <u>Laura Freed, Eric Castleberry</u>	State: <u>WA</u>
Do Normal Circumstances exist on the site? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>T2-P10</u>
Is the site significantly disturbed (Atypical Situation)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect ID: <u>T2</u>
Is Area a Potential Problem Area? (if needed, explain on reverse) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>P10</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Douglas Fir <i>Pseudotsuga menziesii</i>	Tree	FACU	8		
2 Western Red Cedar <i>Thuja plicata</i>	Tree	FAC	9		
3 Skunk Cabbage <i>Lysichiton americanum</i>	Herb	OBL	10		
4 Maple Leaf Currant <i>Ribes howellii</i>	Shrub	NI	11		
5			12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 60%

Remarks: Skunk cabbage was found growing in the storm water ditch found on subject property

HYDROLOGY

<input type="checkbox"/> Recorded Data (describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other <input type="checkbox"/> No recorded data available Field Observations: Depth of Surface Water: <u>N/A</u> (In.) Depth to Free Water in Pit: <u>2</u> (In.) Depth to Saturated Soil: <u>N/A</u> (In.)	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (explain in remarks)
Remarks: <u>Water entered test pit from the sides and not the bottom, indicating that it is from wet soils and not groundwater</u>	

SOILS

Map Unit Name (Series and Phase): <u>Chinkmin</u>	Drainage Class: Moderately well drained				
Taxonomy (Subgroup): <u>Cryods</u>	Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-3	NONE	N/A	N/A	N/A	Forest duff
3-6	A	10YR 3/3	N/A	N/A	Dark brown, moist clayey, moderately sorted, subrounded, small gravelly, well sorted, subrounded, fine sandy silt
6-12	A	10YR 3/3	N/A	N/A	Dark brown, wet, clayey silt with inclusions of red poorly sorted, subrounded, fine to medium sand
12-18	A	2.5Y 3/3	N/A	N/A	Barely filling the auger, brown, wet silty, moderately sorted, subangular to subrounded, small gravelly, well sorted, rounded, fine sand
18-24	A	2.5Y 3/3	N/A	N/A	Not filling the auger, dark brown, wet silty, moderately sorted, subrounded small gravel
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol	<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils			
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Listed on National Hydric Soils List			
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Concretions	<input type="checkbox"/> Listed on Local Hydric Soils List			
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Organic Streaking in Sandy Soils	<input type="checkbox"/> Other (explain in remarks)			
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Remarks:	

Form Content Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Snoqualmie Summit</u>		Date: <u>6/25/08</u>
Applicant/Owner: <u>Evo Properties</u>		County: <u>Kittitas</u>
Investigator: <u>Laura Freed, Eric Castleberry</u>		State: <u>WA</u>
Do Normal Circumstances exist on the site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>T4-P11</u>
Is the site significantly disturbed (Atypical Situation)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect ID: <u>T4</u>
Is Area a Potential Problem Area? (if needed, explain on reverse)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>P11</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Douglas Fir <i>Pseudotsuga menziesii</i>	Tree	FACU	8		
2 Red Alder Sapling <i>Alnus rubra</i>	Tree	FAC	9		
3 Maple Leaf Currant <i>Ribes howellii</i>	Shrub	NI	10		
4 Salmonberry <i>Rubus spectabilis</i>	Shrub	FAC+	11		
5			12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 60%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other <input type="checkbox"/> No recorded data available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (explain in remarks)
Field Observations: Depth of Surface Water: <u>N/A</u> (In.) Depth to Free Water in Pit: <u>3</u> (In.) Depth to Saturated Soil: <u>N/A</u> (In.)		
Remarks: <u>Water entered test pit from sides and not the bottom which indicates that the water is from wet soils and not groundwater</u>		

SOILS

Map Unit Name (Series and Phase): <u>Chinkmin</u>	Drainage Class: <u>Moderately well drained</u>
Taxonomy (Subgroup): <u>Cryods</u>	Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-8	NONE	N/A	N/A	N/A	Forest duff
8-12	A	10YR 3/3	N/A	N/A	Dark brown, moist silty, poorly sorted, subrounded, fine to medium sand
12-18	A	10YR 3/3	N/A	N/A	Dark brown, wet, clayey, silty, poorly sorted, subrounded, fine to medium sand
18-24	A	10YR 3/3	N/A	N/A	Brown, moist, clayey, moderately sorted, subrounded to subangular, small gravelly, poorly sorted, subrounded, fine to medium sandy silt with charcoal

Hydric Soil Indicators: <input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors <input type="checkbox"/> Concretions <input type="checkbox"/> Organic Streaking in Sandy Soils	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Other (explain in remarks)
Remarks: <u>Charcoal will cause the soil to appear darker</u>		

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Hydric Soils Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Remarks:			

Form Content Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Snoqualmie Summit</u>		Date: <u>6/25/08</u>
Applicant/Owner: <u>Evo Properties</u>		County: <u>Kittitas</u>
Investigator: <u>Laura Freed, Eric Castleberry</u>		State: <u>WA</u>
Do Normal Circumstances exist on the site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>T4-P12</u>
Is the site significantly disturbed (Atypical Situation)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect ID: <u>T4</u>
Is Area a Potential Problem Area? (if needed, explain on reverse)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>P12</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Douglas Fir <i>Pseudotsuga menziesii</i>	Tree	FACU	8		
2 Trailing Blackberry <i>Rubus ursinus</i>	Shrub	FACU	9		
3 Maple Leaf Currant <i>Ribes howellii</i>	Shrub	NI	10		
4 Salmonberry <i>Rubus spectabilis</i>	Shrub	FAC+	11		
5 Red Alder <i>Alnus rubra</i>	Tree	FAC	12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 60%

Remarks: The established Douglas Fir appeared to be dying from the wet soils caused by storm water in the area

HYDROLOGY

<input type="checkbox"/> Recorded Data (describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other <input type="checkbox"/> No recorded data available		Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands		Secondary Indicators (2 or more required) <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (explain in remarks)	
Field Observations: Depth of Surface Water: <u>N/A</u> (In.) Depth to Free Water in Pit: <u>6</u> (In.) Depth to Saturated Soil: <u>N/A</u> (In.)		Remarks: <u>The water in the test pit entered from the sides and not the bottom, indicative that the source is wet soils and not groundwater.</u>			

SOILS

Map Unit Name (Series and Phase): <u>Chinkmin</u>		Drainage Class: <u>Moderately well drained</u>			
Taxonomy (Subgroup): <u>Cryods</u>		Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc
0-4	NONE	N/A	N/A	N/A	Forest duff
4-6	A	10YR 2/2	N/A	N/A	Dark brown, wet, moderately sorted, subrounded to subangular, small gravelly poorly sorted subrounded fine to medium sand
6-18	A	10YR 3/3	N/A	N/A	Dark brown, wet clayey silty poorly sorted, subrounded, fine to medium sand
18-24	A	10YR 3/3	N/A	N/A	Dark brown, wet clayey, moderately sorted subrounded to subangular, small gravelly, poorly sorted, subrounded fine to medium sandy silt
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime		<input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors <input type="checkbox"/> Concretions <input type="checkbox"/> Organic Streaking in Sandy Soils		<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Other (explain in remarks)	
Remarks: <u>Abundant forest humus causes the soil to appear darker</u>					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Hydric Soils Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Remarks:			

Form Content Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Snoqualmie Summit</u>	Date: <u>6/25/08</u>
Applicant/Owner: <u>Evo Properties</u>	County: <u>Kittitas</u>
Investigator: <u>Laura Freed, Eric Castleberry</u>	State: <u>WA</u>
Do Normal Circumstances exist on the site? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>T4-P13</u>
Is the site significantly disturbed (Atypical Situation)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect ID: <u>T4</u>
Is Area a Potential Problem Area? (if needed, explain on reverse) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>P13</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Douglas Fir <i>Pseudotsuga menziesii</i>	Tree	FACU	8		
2 Willow <i>Salix sp.</i>	Tree	FACW- FAC	9		
3 Red Alder <i>Alnus rubra</i>	Tree	FAC	10		
4 Deer Fern <i>Blechnum spicant</i>	Fern	FAC+	11		
5			12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 75%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other <input type="checkbox"/> No recorded data available	Wetland Hydrology Indicators. Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands	Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (explain in remarks)
Field Observations: Depth of Surface Water: <u>N/A</u> (In.) Depth to Free Water in Pit: <u>N/A</u> (In.) Depth to Saturated Soil: <u>N/A</u> (In.)	Remarks:	

SOILS

Map Unit Name (Series and Phase): <u>Chinkmin</u>	Drainage Class: <u>Moderately well drained</u>
Taxonomy (Subgroup): <u>Cryods</u>	Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc
0-6	NONE	N/A	N/A	N/A	Forest duff
6-12	NONE	N/A	N/A	N/A	Fine gray, moist, poorly sorted, subrounded, fine to medium dioritic sand with inclusions of oxidized silt (parent material was oxidized)
12-18	A	10YR 4/4	N/A	N/A	Reddish brown, moist clayey, moderately sorted, subangular to subrounded, small gravelly, poorly sorted, subrounded, fine to medium sandy silt with inclusions of oxidized silt
18-24	A	10YR 3/3	N/A	N/A	Reddish brown, wet, moderately sorted, subangular to subrounded, small gravelly poorly sorted, subrounded, fine to medium sandy silt with inclusions of oxidized silt

Hydric Soil Indicators: <input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors <input type="checkbox"/> Concretions <input type="checkbox"/> Organic Streaking in Sandy Soils	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Other (explain in remarks)
Remarks:		

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Remarks:	

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